THE Journal OF THE Kansas Medical Society

NOVEMBER
1957

VOL LVIII
NO XI

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REFERENCES:

(1) Petersdorf, R. G.; Bennett, I. L., Jr., & Rose, M. C.: *Bull. Johns Hopkins Hosp.* 100:1, 1957. (2) Yow, E. M.: *GP* 15:102, 1957. (3) Altemeier, W. A., in Welch, H., and Marti-Ibanez, F., ed.: Antibiotics Annual 1956-1957, New York, Medical Encyclopedia, Inc., 1957, p. 629. (4) Kempe, C. H.: *California Med.* 84:242, 1956. (5) Spink, W. W.: *Ann. New York Acad. Sc.* 65:175, 1956. (6) Rantz, L. A., & Rantz, H. H.: *Arch. Int. Med.* 97:694, 1956. (7) Wise, R. I.; Cranny, C., & Spink, W. W.: *Am. J. Med.* 20:176, 1956. (8) Smith, R. T.; Platou, E. S., & Good, R. A.: *Pediatrics* 17:549, 1956. (9) Royer, A.: Scientific Exhibit, 89th Ann. Conv. Canad. M. A., Quebec City, Quebec, June 11-15, 1956. (10) Bennett, I. L., Jr.: *West Virginia M. J.* 53:55, 1957. (11) Altemeier, W. A.: *Postgrad. Med.* 20:319, 1956. (12) Felix, N. S.: *Pediat. Clin. North America* 3:317, 1956. (13) Metzger, W. I., & Jenkins, C. J., Jr.: *Pediatrics* 18:929, 1956. (14) Woolington, S. S.; Adler, S. J., & Bower, A. G., in Welch, H., and Marti-Ibanez, F., ed.: Antibiotics Annual 1956-1957, New York, Medical Encyclopedia, Inc., 1957, p. 365. (15) Waisbren, B. A., & Strelitzer, C. L.: *Arch. Int. Med.* 99:744, 1957.

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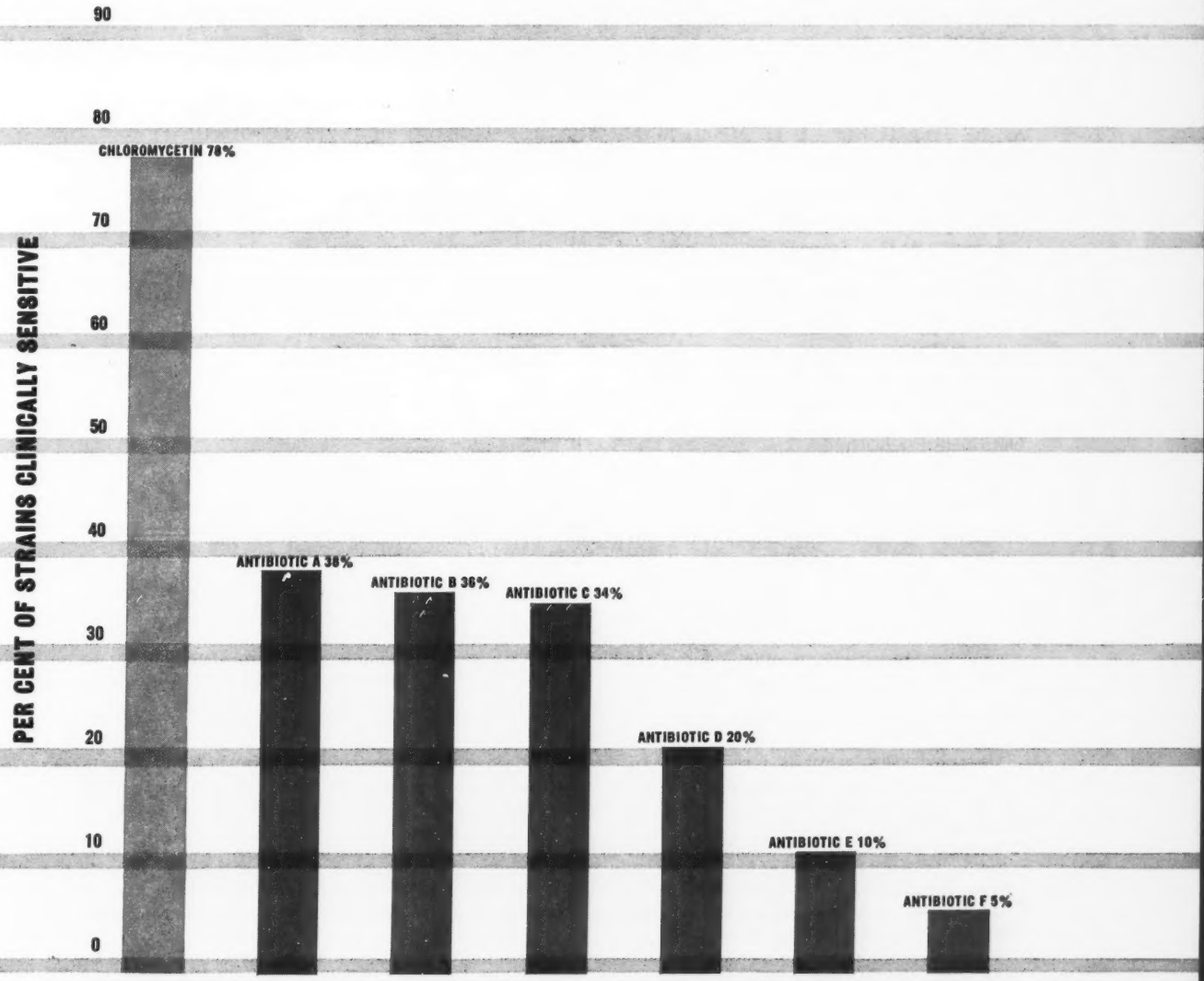
PER CENT OF STRAINS CLINICALLY SENSITIVE

COMPARATIVE SENSITIVITY OF MIXED PROTEUS SPECIES TO CHLOROMYCETIN AND SIX OTHER WIDELY USED ANTIBIOTIC AGENTS*



*This graph is adapted from Waisbren and Strelitzer.[15] It represents *in vitro* data obtained with clinical material isolated between the years 1951 and 1956. Inhibitory concentrations, ranging from 3 to 25 mcg. per ml., were selected on the basis of usual clinical sensitivity.

THE JOURNAL
of the
KANSAS MEDICAL SOCIETY

Volume LVIII NOVEMBER, 1957 Number 11

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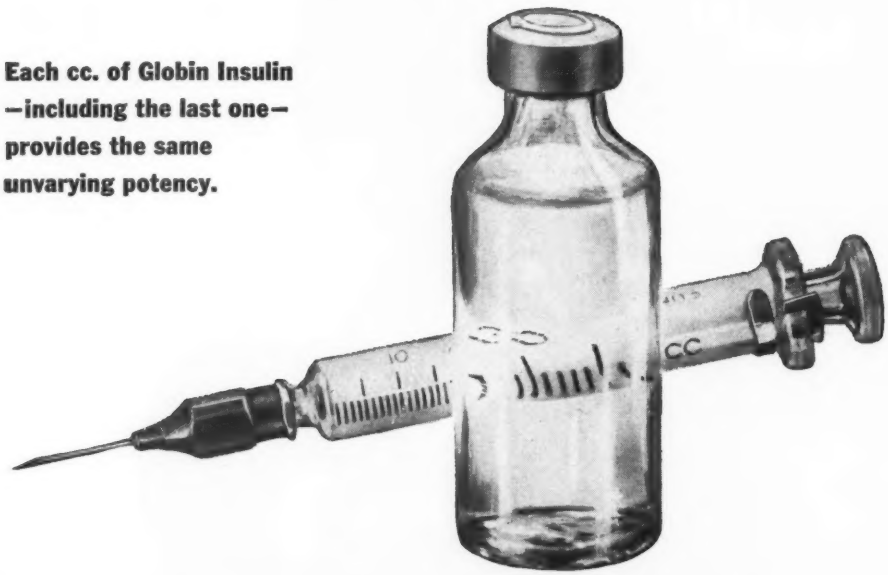

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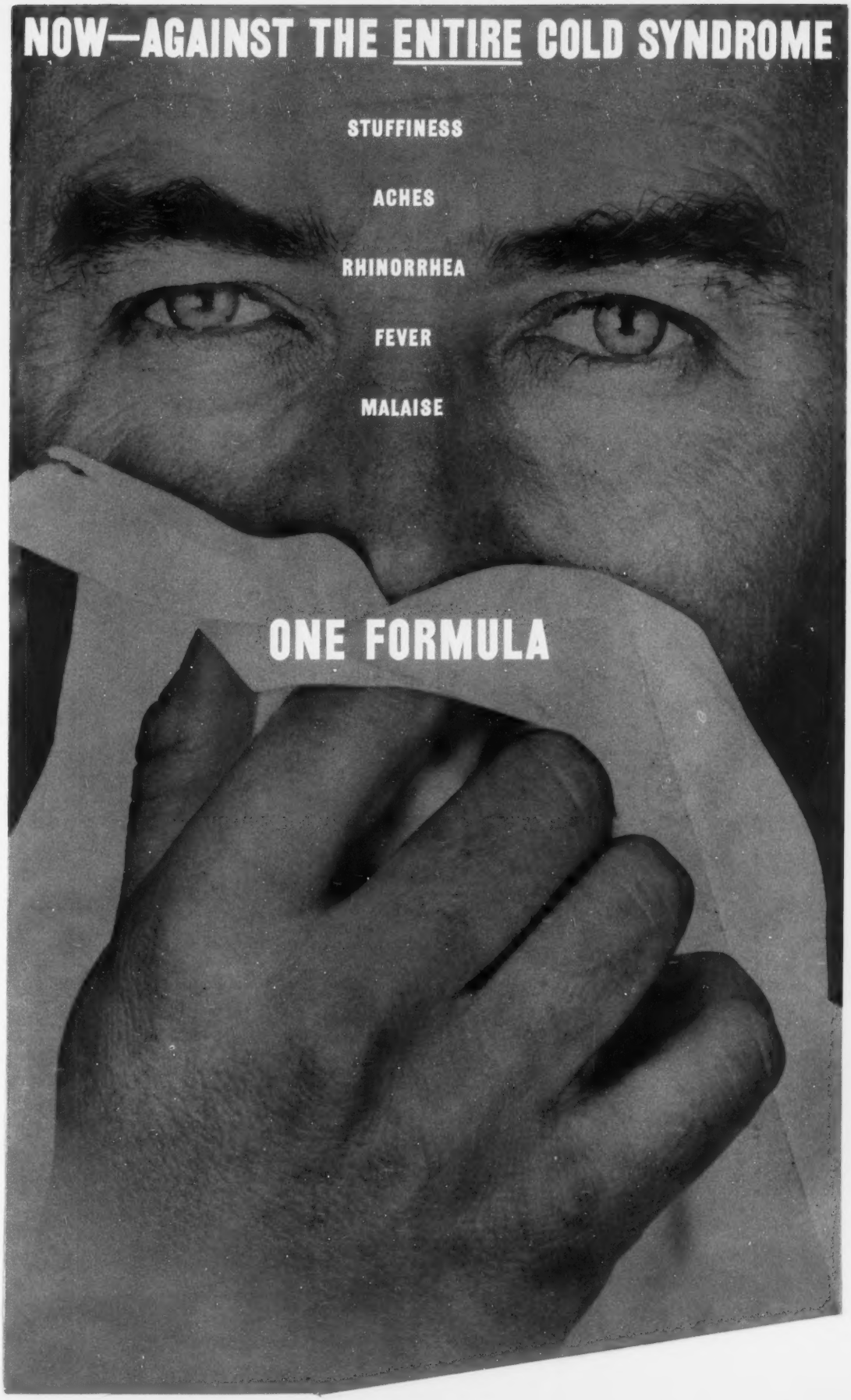
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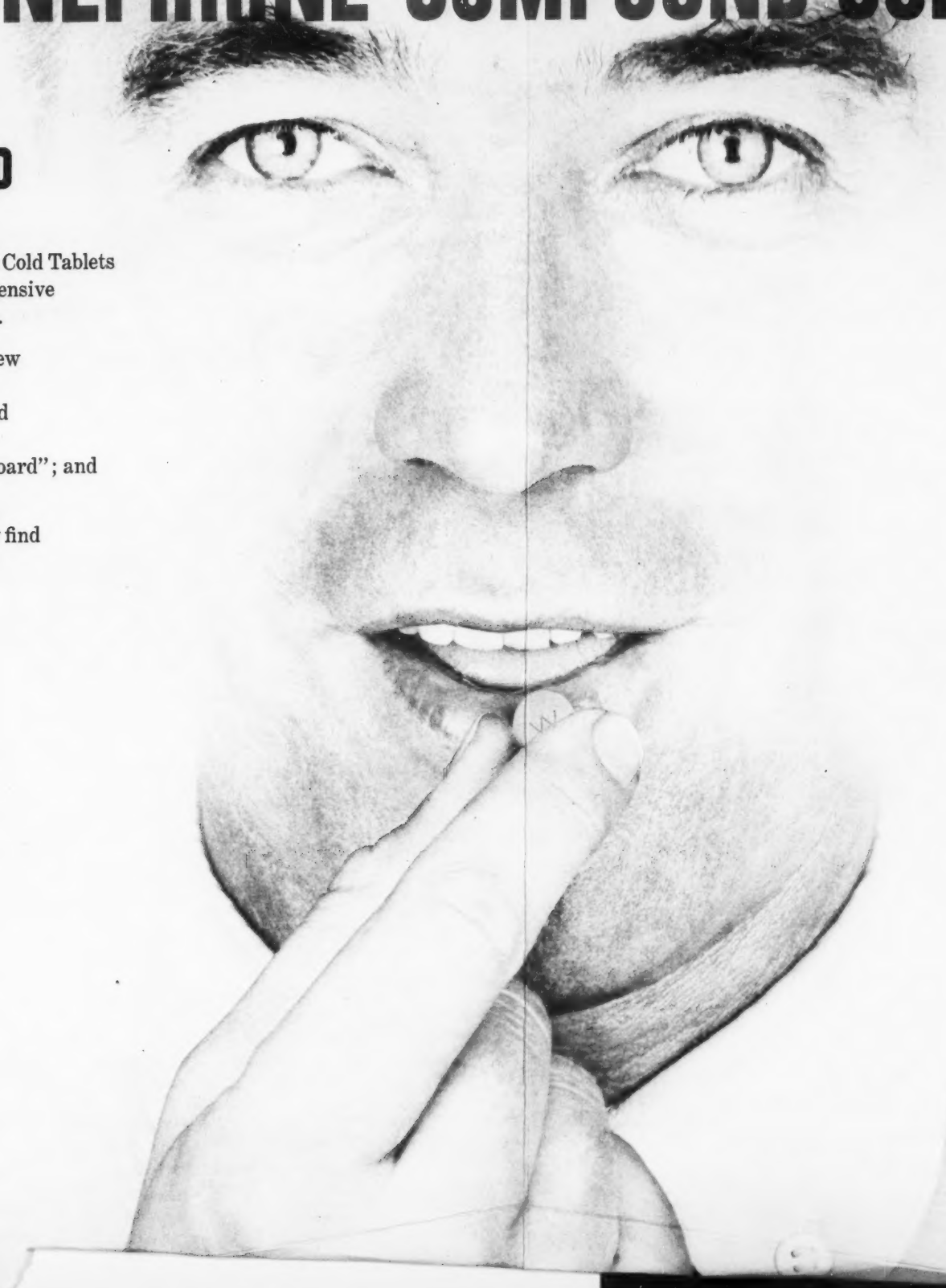

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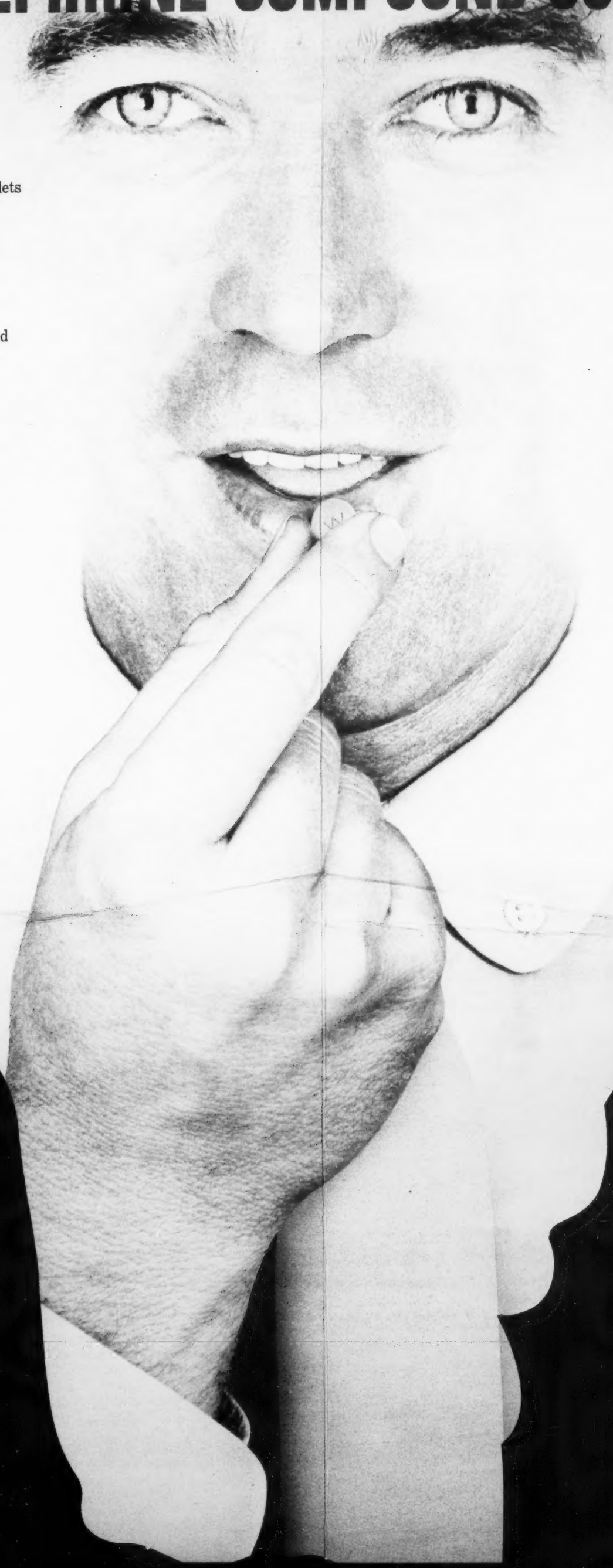

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topical antihist

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wetting agent a

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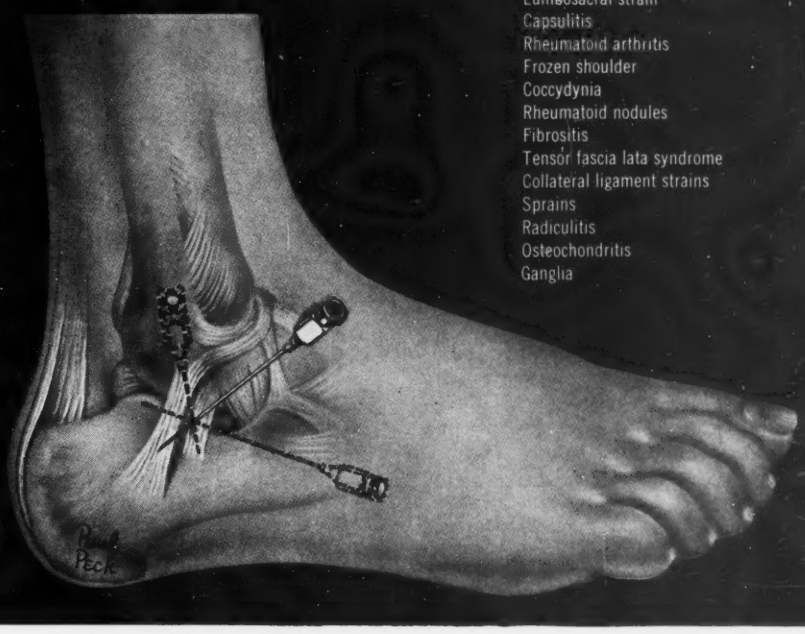

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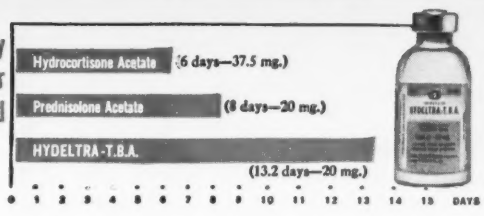
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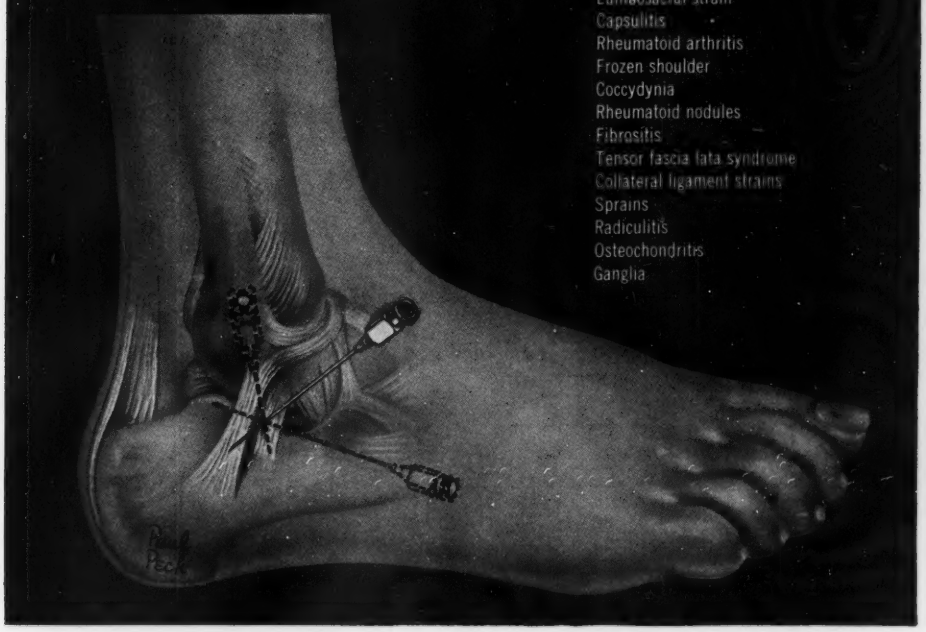
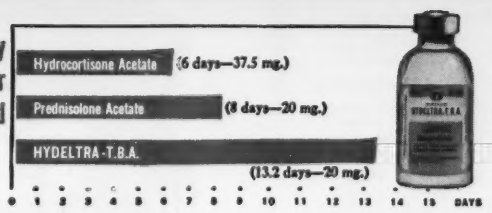


· **Anti-inflammatory effect lasts longer than that provided by any other steroid ester**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Flu Fight

Drug Firms Speed Up Vaccine Output, But Will the U.S. Need It?

Asiatic Virus Raises Threat
Government Buys, Prods
nd Hens Have to Help

en Attack, Rapid Spread

8 STUDENTS ON FLIGHTS TO U. S. HAVE ASIAN FLU

New York, Aug. 15 (AP) Laboratory tests on e foreign exchange student arrived Aug. 8 show they victims of Asiatic flu, the health department repo today. The eight arrived plane from Europe.

Twenty-nine other stud suffering from influenza rived Tuesday from Rot dam on the ship Arosa Sky. One, Nicholas Memmos, Greek exchange student, yesterday. Six of these stu- dents were released today the others are to be r tomorrow. It has not termined whether died from Asiatic

Pe vac izat flo the ority States

THE INFLUENZA EPI

How Deadly Will it Be? What Is
What Can We Do about It?

IF YOU

Answers About

A new illness—"Far —is showing up here around the world. Suspe now have appeared in

The War on Mutant A

If Florence was in the grip of an epidemic of colds, coughs and fevers, astrologers . . . declared that it was caused by the influence of an unusual conjunction of planets. This sickness to be known as "infl

—Chronicles of 1200-1470.

To combat new r fluence," a worldwide this week in respons from the Far East. S is the World Health neva, which collects i from around the globe specimens of the ene tions. In more than a including those of th

Asian Flu: the Outlook

Asian influenza will hit the U.S. this fall before mass immunization can be effective, and the nation faces an epidemic which may strike 15 million to 30 million people. The disease is relatively mild (in no way comparable to the killing "Spanish flu" of 1918-19), and is likely to cause only a small number of deaths among the feeble young and enfeebled old. But it may compel 10% to 20% of the population in affected areas to tak thus

W quie a co pect Ser rep

U.S. Fighting Asia Fl

The War On Asiatic Flu

There's cause for concern about Asiatic flu, but scientists and public health officials see no reason for anyone to panic.

First shipments of the vaccine against the new influenza strain have arrived in Chicago, setting off a flood of telephone calls from worried patients to doctors, and from doctors to drug suppliers. This is a norm pattern of mass fear and is understan The of the

Even though Salk vaccine priorities were necessary, the regulation produced administrative headaches, public complaints and probably a gray, if not a black market. When regulation i invoke it. would

PUBLIC HEALTH

Influenza May St

➤ INFLUENZA, one of the most unpredictable of communicable diseases, is resting "on cat feet" across the nation right now. It has already struck once this year in mild epidemic form at an Air Force base in Colorado. When and how severely it will strike again is a perennial riddle to public health authorities.

It will probably not lie dormant for the rest of the winter months. At the least there will be sporadic outbr throughout the country. If ditions occur, it could sv

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to counteract
complications from
"ORIENTAL FLU"
ZA EPIDEMIC
What Is Causing It?
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effective against staph-, strep- and pneumococci
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vitamin C **—to meet added requirements during stress of illness**
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CORICIDIN FORTÉ provides comprehensive therapy not only to counteract congestive and coryzal symptoms of the severest cold but also to combat lassitude, fever, aching muscles, torpor, depression and general malaise.

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there are many ways of looking at a cold

from all angles...best for severe colds

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CAPSULES

Each CORICIDIN FORTÉ Capsule provides

CHLOR-TRIMETON® Maleate (chlorprophenpyridamine maleate)	4 mg.
Salicylamide	0.19 Gm.
Phenacetin	0.13 Gm.
Caffeine	0.03 Gm.
Ascorbic acid	0.05 Gm.
Methamphetamine hydrochloride	1.25 mg.

in bottles of 100 and 1000 capsules.

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SCHERING CORPORATION • BLOOMFIELD, NEW JERSEY

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when you need to give the patient
with a cold the benefit of the doubt

CORICIDIN® WITH PENICILLIN
TABLETS

dual control with clinically proved CORICIDIN and oral penicillin—
arrest the cycle of cold symptoms
forestall bacterial infection

Each CORICIDIN with Penicillin Tablet contains	
Penicillin G procaine	150,000 units
CHLOR-TRIMETON® Maleate (chlorprophenpyridamine maleate)	2 mg.
Aspirin	0.15 Gm.
Phenacetin	0.12 Gm.
Caffeine	0.03 Gm.

Bottles of 24, 100.

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SCHERING CORPORATION · BLOOMFIELD, NEW JERSEY *Schering*

CLINICAL COLLOQUY

My patients complain that the effect of the pain tablet I prescribe often wears off in less than 3 hours.

Why not try the new analgesic that gives faster, longer-lasting pain relief?

You mean something that doesn't require repeat dosage so often?

Yes—it's called Percodan.® It not only works in 5 to 15 minutes but one tablet sustains its pain-relieving effect for 6 hours or longer!

How about side effects?

No problem. For example, the incidence of constipation is rare with Percodan.*

Sounds worth trying—what's the average adult dose?

One tablet every 6 hours. That's all.

Where can I get literature on Percodan?

Just ask your Endo detailman or write to:

Endo® ENDO LABORATORIES
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*U.S. Pat. 2,628,185. PERCODAN contains salts of dihydrohydroxycodeinone and homatropine, plus APC. May be habit-forming. Available through all pharmacies.

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when anxiety and tension "erupts" in the G. I. tract...

IN GASTRIC ULCER

PATHIBAMATE*

Meprobamate with PATHILON® Lederle

Combines Meprobamate (*400 mg.*) the most widely prescribed tranquilizer . . . helps control the "emotional overlay" of gastric ulcer — without fear of barbiturate loginess, hangover or habituation . . . *with* PATHILON (*25 mg.*) the anticholinergic noted for its extremely low toxicity and high effectiveness in the treatment of many G.I. disorders.

Dosage: 1 tablet t.i.d. at mealtime. 2 tablets at bedtime. ***Supplied:*** Bottles of 100, 1,000.

*Trademark ®Registered Trademark for Tridihexethyl Iodide Lederle

Lederle

LEDERLE LABORATORIES DIVISION, AMERICAN CYANAMID COMPANY, PEARL RIVER, NEW YORK

NOW—EFFECTIVE STEROID HORMONE THERAPY OF RHEUMATIC AFFECTIONS WITH GREATER SAFETY AND ECONOMY

PABALATE-HC

Robins

Pabalate with Hydrocortisone

Clinical evidence indicates that, in Pabalate-HC, the synergistic antirheumatoid effects of hydrocortisone, salicylate, para-aminobenzoate, and ascorbic acid achieve satisfactory remission of symptoms in *up to 85% of cases studied*

—*with a much higher degree of safety*

—*even when therapy is maintained for long periods*

—*at significant economy for the patient*

Each tablet of Pabalate-HC contains 2.5 mg. of hydrocortisone—50% more potent than cortisone, yet not more toxic.

FORMULA

In each tablet:

Hydrocortisone (alcohol)	2.5 mg.
Potassium salicylate	0.3 Gm.
Potassium para-aminobenzoate	0.3 Gm.
Ascorbic acid	50.0 mg.

DOSAGE: Two tablets four times daily. Additional information on request.

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A. H. ROBINS CO., INC. RICHMOND 20, VIRGINIA

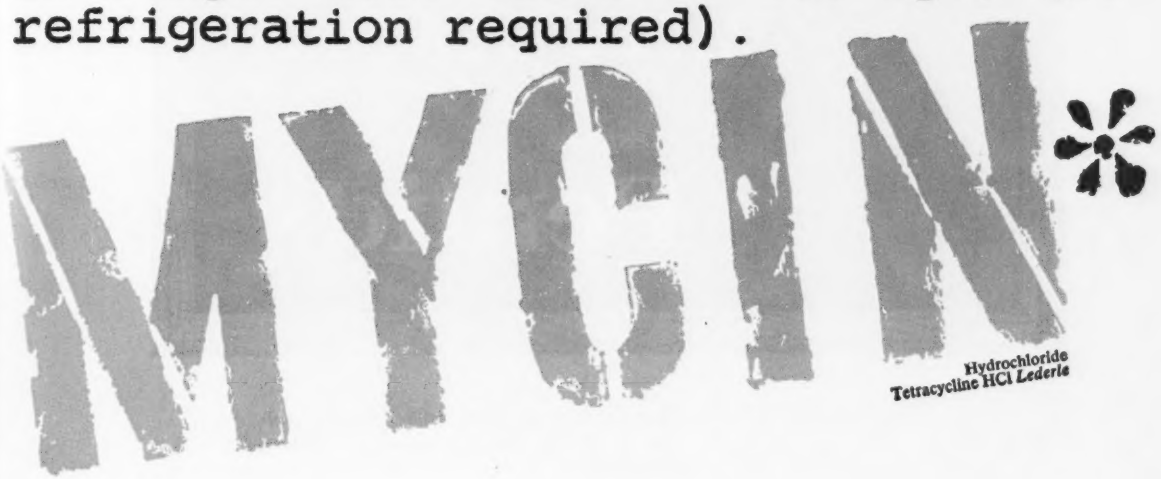
Ethical Pharmaceuticals of Merit since 1878

INTRAVENOUS Compatible with common IV fluids. Stable for 24 hours in solution at room temperature. Average IV dose is 500 mg. given at 12 hour intervals. Vials of 100 mg., 250 mg., 500 mg.

THERAPEUTIC BLOOD LEVELS ACHIEVED

Many physicians advantageously use the parenteral forms of ACHROMYCIN in establishing immediate, effective antibiotic concentrations. With ACHROMYCIN you can expect prompt

INTRAMUSCULAR Used to start a patient on his regimen immediately, or for patients unable to take oral medication. Convenient, easy-to-use, ideally suited for administration in office or patient's home. Supplied in single dose vials of 100 mg., (no refrigeration required).



IN MINUTES -- SUSTAINED FOR HOURS

control, with minimal side effects, over a wide variety of infections - reasons why ACHROMYCIN is one of today's foremost antibiotics.

LEDERLE LABORATORIES DIVISION, AMERICAN CYANAMID COMPANY, PEARL RIVER, NEW YORK

*Reg. U.S. Pat. Off.

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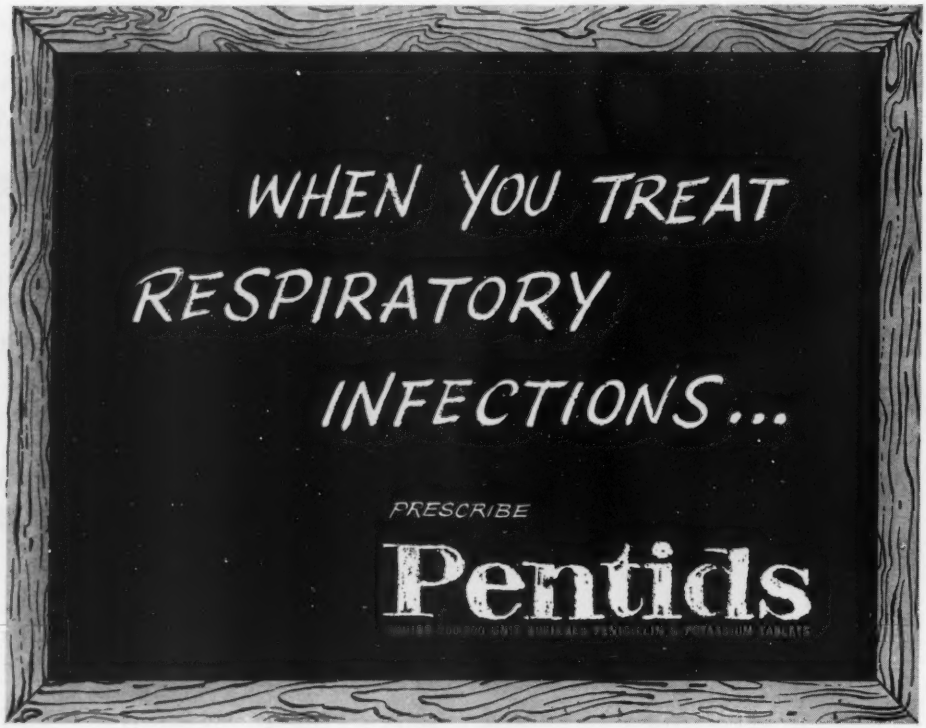


• *six years of experience with Pentids in millions of patients confirm clinical effectiveness and safety*

• *excellent results with 1 or 2 tablets t.i.d. for many common bacterial infections*

• *may be given without regard to meals*

• *economical . . . Pentids cost less than other penicillin salts*

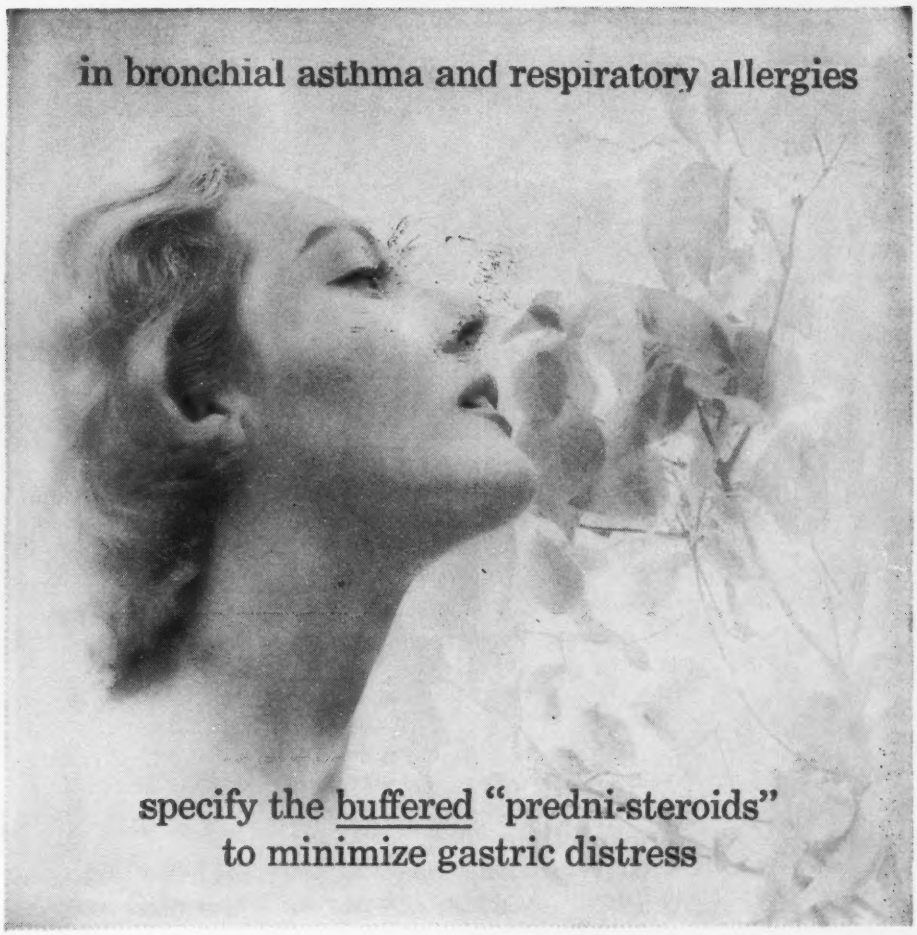
Just 1 or 2 tablets t.i.d. Bottles of 12, 100 and 500

NEW! PENTIDS FOR SYRUP. Orange flavored powder which, when prepared with water, provides 60 cc. of syrup with a potency of 200,000 units of penicillin G potassium per 5 cc. teaspoonful.

Also available: Pentids Capsules, Pentids Soluble Tablets, Pentid-Sulfas.

SQUIBB *Squibb Quality—the Priceless Ingredient*

"PENTIDS"® IS A SQUIBB TRADEMARK



combined steroid-antacid therapy...

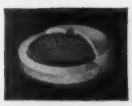
Co-Deltra®
(Prednisone buffered)

Co-Hydeltra®
(Prednisolone buffered)

'Co-Deltra' or 'Co-Hydeltra' provides all the benefits of "predni-steroid" therapy and minimizes the likelihood of gastric distress which might otherwise impede therapy. They provide easier breathing—and smoother control—in bronchial asthma or stubborn respiratory allergies.

SUPPLIED: Multiple Compressed Tablets 'Co-Deltra' or 'Co-Hydeltra' in bottles of 30, 100, and 500.

Multiple Compressed Tablets



2.5 mg. or 5.0 mg. of prednisone or prednisolone, plus 300 mg. of dried aluminum hydroxide gel and 50 mg. of magnesium trisilicate.

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MERCK SHARP & DOHME
DIVISION OF MERCK & CO., INC.
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For Speedy Return To Normal Nutrition

Meat...

in the congestive phase of cardiac disease

Meat fits well into the moderate-protein, restricted-sodium, acid-ash diet currently recommended for many patients with congestive cardiac failure.[1]

The protein of meat—in the proportionate arrangement of its essential amino acids—closely approaches the quantitative proportions needed to promote human tissue synthesis and repair. For this reason lean meat proves important in maintaining positive nitrogen balance without excessive protein intake.

The sodium content of meat prepared without added salt is relatively low. Per 100 grams, beef muscle meat shows approximately 50 mg. of sodium, lamb 90 mg., pork 60 mg., and veal 50 mg.[2]

The acid ash of meat aids in the promotion of diuresis.

The easy digestibility of meat is a prime requisite of foods specified for the patient with congestive cardiac disease.

In addition to these important features, meat contributes other nutritional factors essential in any convalescence —the B vitamins thiamine, riboflavin, niacin, pantothenic acid, B_6, and B_{12}, and the minerals iron, phosphorus, potassium, and magnesium.

1. Odell, W. M.: Nutrition in Cardiovascular Disease, in Wohl, M. C., and Goodhart, R. S.: Modern Nutrition in Health and Disease, Philadelphia, Lea & Febiger, 1955, p. 699.
2. Bills, C. E.; McDonald, F. G.; Niedermeier, W., and Schwartz, M. C.: Sodium and Potassium in Foods and Waters, J. Am. Dietet. A. *25*:304 (Apr.) 1949.

The nutritional statements made in this advertisement have been reviewed by the Council on Foods and Nutrition of the American Medical Association and found consistent with current authoritative medical opinion.

American Meat Institute
Main Office, Chicago...Members Throughout the United States

Relieve moderate or severe pain

Reduce fever

Alleviate the general malaise of upper respiratory infections

'TABLOID'

'EMPIRIN' COMPOUND*

WITH

CODEINE PHOSPHATE*

maximum codeine analgesia/optimum antipyretic action

*Subject to Federal Narcotic Regulations

BURROUGHS WELLCOME & CO. (U.S.A.) INC., Tuckahoe, New York

Symbols OF PROVEN PAIN RELIEF

gr. 1

gr. ½

gr. ¼

gr. ⅛

Formulas for dependable relief...

...from moderate to severe pain complicated by tension, anxiety and restlessness.

'CODEMPIRAL' NO. 3*

Codeine Phosphate	gr. ½
Phenobarbital	gr. ¼
Acetophenetidin	gr. 2½
Aspirin (Acetylsalicylic Acid)	gr. 3½

'CODEMPIRAL' NO. 2*

Codeine Phosphate	gr. ¼
Phenobarbital	gr. ¼
Acetophenetidin	gr. 2½
Aspirin (Acetylsalicylic Acid)	gr. 3½

...from pain of muscle and joint origin, simple headache, neuralgia, and the symptoms of the common cold.

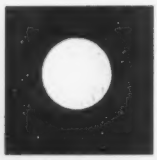
'TABLOID'

'EMPIRIN' COMPOUND®

Acetophenetidin	gr. 2½
Aspirin (Acetylsalicylic Acid)	gr. 3½
Caffeine	gr. ½

...from mild pain complicated by tension and restlessness.

'EMPIRAL'®



Phenobarbital	gr. ¼
Acetophenetidin	gr. 2½
Aspirin (Acetylsalicylic Acid)	gr. 3½

*Subject to Federal Narcotic Regulations

BURROUGHS WELLCOME & CO. (U.S.A.) INC., Tuckahoe, New York

unique derivative of Rauwolfia canescens

Harmonyl*

combines the full effectiveness of the rauwolfias with a new degree of freedom from side effects

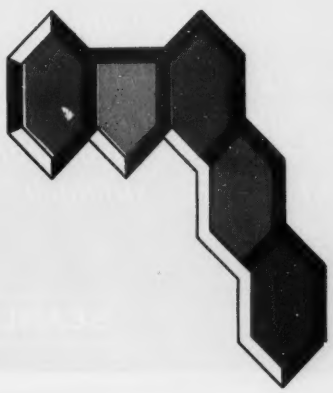
Harmonyl makes rauwolfia more useful in your everyday practice. Two years of clinical evaluation have shown this new alkaloid exhibits significantly fewer and milder side effects than reserpine. Yet, Harmonyl compares to the most potent forms of rauwolfia in effectiveness.

Most significant: Harmonyl causes less mental and physical depression—and far less of the lethargy seen with many rauwolfia preparations.

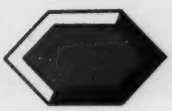
Patients became more lucid and alert, for example, in a study[1] of chronically ill, agitated senile cases treated with Harmonyl. And these patients were completely free from side effects—although a group on reserpine developed such symptoms as anorexia, headache, bizarre dreams, shakes, nausea.

Harmonyl has also demonstrated its potency and relative freedom from side effects in hypertension. In a study comparing various forms of rauwolfia[2], the investigators reported deserpidine "an affective agent in reducing the blood pressure of the hypertensive patient both in the mild to moderate, as well as the severe form of hypertension." They also noted that side reactions were "less annoying and somewhat less frequent" with this new alkaloid. Other studies confirm that few cases of giddiness, vertigo or sense of detached existence or disturbed sleep are seen with Harmonyl.

Professional literature on this unique rauwolfia derivative is available upon request. Harmonyl is supplied in 0.1-mg., 0.25-mg. and 1-mg. tablets. Abbott



References: 1. Communication to Abbott Laboratories, 1956. 2. Moyer, J. H. et al: Deserpidine for the Treatment of Hypertension, Southern Medical J., 50:499, April, 1957.



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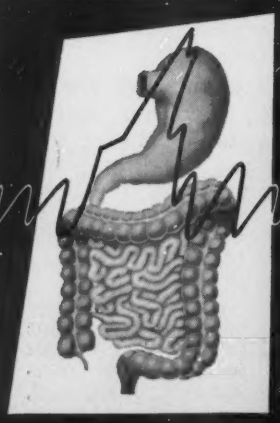
PHENAPHEN® PLUS

Phenaphen Plus is the physician-requested combination of **Phenaphen**, plus an antihistaminic and a nasal decongestant.

Available on prescription only. Robins

each coated tablet contains:	Phenaphen
Phenacetin (3 gr.)	194.0 mg.
Acetylsalicylic Acid (2½ gr.)	162.0 mg.
Phenobarbital (¼ gr.)	16.2 mg.
Hyoscyamine Sulfate	0.031 mg.
plus	
Prophenpyridamine Maleate	12.5 mg.
Phenylephrine Hydrochloride	10.0 mg.

in spasticity of the GI tract



Pavatrine 125 mg.
with Phenobarbital 15 mg.

- *is an effective dual antispasmodic*
- *combining musculotropic and neurotropic action plus mild central nervous system sedation for "the butterfly stomach."*

dosage: one tablet before each meal and at bedtime.

SEARLE

Current Concepts in

Feeding Newborns

Successful infant feeding depends on effective planning of the newborn's nutritional regimen. The first feeding, 12 hours after birth, may consist of a prelacteal solution of KARO® Syrup. This should be offered in one or two ounce amounts at two hour intervals for 24 to 48 hours to fulfill the high water requirement during the first week of life. Breast feeding may be initiated on the second day for five minute intervals to obtain colostrum and stimulate breast secretion. However, the prelacteal feeding is continued thereafter and between nursings.

Artificial feeding is offered on the second day if breast feeding is denied. Small infants are fed at three hour intervals and large infants at four hour intervals. The initial formula usually is a low caloric milk mixture to enable gradual adaptation of the feeding to the infant's tolerance. Concentration of the formula is gradually increased at intervals of several days, in the absence of digestive disturbances. The infant should be fed in a semi-reclining position, burped during and after feeding, and kept on his right side or abdomen undisturbed for an hour.

The same problems of infant feeding recur from generation to generation, but solutions may differ with each era. The carbohydrate requirement for all infants is as completely fulfilled by KARO Syrup today as a generation ago. Whatever the type of milk adapted to the individual infant, KARO Syrup may be added confidently because it is a balanced mixture of low molecular weight sugars, readily miscible, well tolerated, palliative, hypoallergenic, resistant to fermentation in the intestine, easily digestible, readily absorbed and non-laxative. It is readily available in all food stores.

℞ FIRST FORMULAS FOR NEWBORNS ADAPTED ACCORDING TO TOLERANCE

FORMULA I .....11 cals./oz.
*Whole Milk ..... 8 oz.
Water .....12 oz.
Karo .....½ oz.
3½ oz. x 6 q 4h.

FORMULA I .....12.5 cals./oz.
**Evap. milk ..... 4 oz.
Water .....14 oz.
Karo .....½ oz.
3½ oz. x 6 q 4h.

FORMULA I .....11 cals./oz.
Dried milk .....4 tbsp.
Water .....20 oz.
Karo .....½ oz.
3½ oz. x 6 q 4h.

FORMULA III .....16 cals./oz.
Whole milk .....10 oz.
Water .....10 oz.
Karo ..... 1 oz.
3½ oz. x 6 q 4h.

FORMULA III .....20 cals./oz.
Evap. milk ..... 6 oz.
Water .....12 oz.
Karo ..... 1 oz.
3 oz. x 6 q 4h.

FORMULA III .....18 cals./oz.
Dried milk .....6 tbsp.
Water .....20 oz.
Karo ..... 1 oz.
3½ oz. x 6 q 4h.

FORMULA II .....13.5 cals./oz.
Whole milk ..... 9 oz.
Water .....11 oz.
Karo .....¾ oz.
3½ oz. x 6 q 4h.

FORMULA II .....16 cals./oz.
Evap. milk ..... 5 oz.
Water .....13 oz.
Karo .....¾ oz.
3 oz. x 6 q 4h.

FORMULA II .....14.5 cals./oz.
Dried milk .....5 tbsp.
Water .....20 oz.
Karo .....¾ oz.
3½ oz. x 6 q 4h.

*Whole lactic acid milk formulas may also be prepared from whole cow's milk.

**Whole lactic acid milk formulas may also be prepared from evaporated cow's milk.

Adapted from Nelson's Pediatrics, Saunders, Phila. 1954

MEDICAL DIVISION
CORN PRODUCTS REFINING CO.
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Produced by
Corn Products Refining Co.

"the value of analgesic and tranquilizing agents should be clearly recognized in the management of [angina]..."[1]

new for angina

PETN + ATARAX

PENTAERYTHRITOL TETRANITRATE — BASIC OF HYDROXYZINE

CARTRAX*

links freedom from anginal attacks with a shelter of tranquility

In pain. Anxious. Fearful. On the road to cardiac invalidism. These are the pathways of angina patients. For fear and pain are inextricably linked in the angina syndrome.

For angina patients—perhaps the next one who enters your office—won't you consider new CARTRAX? This doubly effective therapy combines PETN (pentaerythritol tetranitrate) for lasting vasodilation and ATARAX for peace of mind. Thus CARTRAX relieves not only the anginal pain but reduces the concomitant anxiety.

Dosage and supplied: begin with 1 to 2 yellow tablets (10 mg. PETN plus 10 mg. ATARAX) 3 to 4 times daily. This may be increased for maximal effect by switching to *pink* tablets (20 mg. PETN plus 10 mg. ATARAX). In bottles of 100.

CARTRAX should be taken *before* meals, on a *continuous* dosage schedule. Use with caution in glaucoma.

Roerig

New York 17, New York

1. Russek, H. I.: J. Am. Geriat. Soc. 4:877 (Sept.) 1956.

*Trademark

disappointed with half measures in angina?

← READ THIS

Mom "wears
the pants"
once too
often

frozen shoulder

Bursitis and tenosynovitis are new terms to homemakers, but they are not uncommon sequels to overexertion. Early antirheumatic therapy is to be encouraged in the treatment of these conditions, as it is in more serious rheumatic conditions, to alleviate pain and prevent progression of the disorder. With adequate therapy the prognosis of bursitis in its acute stage is good. Delaying therapy may result in extension of the inflammation and gross anatomical changes that tend to incapacitate the patient.

SIGMAGEN provides doubly protective corticoid-salicylate therapy—a combination of METICORTEN® (prednisone) and acetylsalicylic acid providing additive antirheumatic benefits as well as rapid analgesic effect. These benefits are supported by aluminum hydroxide to counteract excess gastric acidity and by ascorbic acid, the vitamin closely linked to adrenocortical function, to help meet the increased need for this vitamin during stress situations.

protective corticoid-salicylate therapy

SIGMAGEN*

corticoid-analgesic compound Tablets

for patients who go beyond their physical capacity

Schering

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when infection
strikes the respiratory tract . . .

ILOTYCIN

(Erythromycin, Lilly)

provides singularly effective antibiotic therapy because

***Dosage:** The usual adult dose is 250 mg. every six hours.*

Available in specially coated tablets, pediatric suspensions, drops, otic solution, ointments, and I.V. ampoules.

- Virtually all gram-positive organisms are sensitive
- Allergic reactions following systemic therapy are rare
- Bactericidal action kills susceptible organisms
- Normal intestinal flora is not appreciably disturbed

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The JOURNAL *of the*
KANSAS MEDICAL SOCIETY

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Volume LVIII **NOVEMBER, 1957** **No. 11**

As the Twig Is Bent

J. H. MEANS, M.D., *Boston*

When Professor Dimond invited me to give your third Ralph H. Major lecture, I felt highly honored because I admire Dr. Major for his significant contributions to medical scholarship. When, however, I studied the specifications for this utterance, I became aware that here was a challenge not only impelling but difficult to meet.

Dr. Dimond wrote me that what is wanted is something of my own choosing, but definitely something not scientific. It could be about the history of medicine or about my favorite hobby. The less scientific and the more philosophical, the better.

This is indeed a somewhat unique directive, and more than I can satisfy in full. It would, for instance, be presumptuous for me to enter the realm of medical history here in the home of a master in that field. Also, contrariwise, no more can I altogether avoid the scientific. We live in an age, whether we like it or not, in which science is overwhelming. Neither you nor I can escape science, and in this lecture I shall have to talk of it, but at least my approach to science will be philosophical.

I am thinking of philosophy in the sense cited by Bertrand Russell, namely that "an essential part of its purpose" is "to tell men how to live." As to hobbies, they will come in of course as being essential to the well integrated life, at least provided they are recreative and not merely diverting. One of my teachers, Dr. Richard C. Cabot, said what men live by are work, play, love, and worship, and I have found these a dependable guide to the good life.

The proper title for this talk caused me some concern also. Titles are very important. They likewise are tricky. If the title of a book is not appealing, people may not read it, and if that of a lecture is in no way alluring, people may not attend it. One must, of course, beware of plagiarizing, even though Tom Lehrer recommends it. There are such excellent titles to be found for what we want to say, but someone else has used them: "The Life and Opinions of Tristram Shandy-Gent," for example, or "Out of My Life and Thought." Either of these would suit my purpose very well, but they are not available.

What I actually want to tell you of tonight are the effects which certain persons, ideas, and events have had upon the course which I have followed through my professional life. I hope the title which I have finally chosen will convey this meaning. In any event I will say this—ye who write, give prayerful consideration to your titles. If poorly chosen you may not be read. In scientific writing, if your title doesn't lead to adequate indexing, you may not even be found. I am under no such restriction tonight because this lecture is not scientific, but to avoid any sin, I will tell you my title is taken from "The Moral Essays" of Alexander Pope.

For many years I have been deeply interested both in medical research and medical education. I have followed the course of development of young people going into medicine with keen interest and have watched them grow. At many points I have been in contact with their progress.

Out of such experience has sprung great curiosity about why actually people do go into medicine. There are undoubtedly many reasons. I might attempt a classification of these, but that would be too "scientific" perhaps. Instead I will trace for you, as well as I can discern it, why I went into medicine myself. I hope you will treat this revelation in the same spirit you would any other case history for what, if anything, it is worth, but no more.

The seeds of our life interests may be planted in

Presented as the Ralph H. Major Lecture at the University of Kansas School of Medicine, November 12, 1956.

childhood. When this is so it may be fortunate. At least it can be said, "Happy is he who knows what he wants to do, when what he wants to do is something he is capable of doing competently." It is always depressing to me when a premedical student gives as his reason for going into medicine that he cannot think of anything better. Although such a one may become inspired during his medical school days, I would offer higher betting odds on one in whom the fire had been kindled earlier.

The first great intellectual stimulus that I can remember receiving came, not from school, but from my father. A man of brilliant mind, he should by all rights have had the opportunity to become a career scientist. Being an impecunious parson's son, however, he felt impelled to go into business and make his living. This he did with such success that by 40 he was able to retire and devote the rest of his life to scientific work in the field of aeronautics. Doubtless he would have gone farther if he had had a scientific education, but with only self-education, he made pioneer studies of recognized importance. Among other things, he published in the 1890s the first journal in the United States devoted to aeronautical science—*The Aeronautical Annual.*

I have on my desk at home a letter from Orville Wright to my father dated January 15, 1908, in which appeared the following words: "The old annuals were largely responsible for the active interest which led us (the Wright brothers) to begin experiments in aeronautics."

My father's own experiments had to do with the shape of airfoils. He released gliding models from kites and observed the relation of wing form to length of glide. This was in the late 90s. He predicted in one of his *Annuals* that man would fly as soon as he developed a light motor. The use of gasoline accomplished that.

I was raised in this atmosphere of inquiry, and my father took pains to encourage any budding scientific interest that he thought he found in me. He made no attempt, however, to force me into his own field. Natural history seemed more my dish, and he got me good books in that area. By far the most significant of these were two, the first on invertebrates, the second on vertebrates, by an English lady, Arebella Buckley, who was, or had been, secretary to Thomas Henry Huxley. Very gently this writer led her child reader to the concept of evolution and the Darwinian theory. This was when I was nine or ten years old. I found it very exciting, so much so that at 14 I plunged into the *Origin of Species* and read it through with rapt attention from cover to cover. Recently, full of vainglory, I told about this accomplishment to the great mathematician, Norbert Wiener, whom I have met at MIT, where I now work in the health department. His deflating reply was, "I read it at six!"

Three years following the reading of the *Origin* came a wonderfully stimulating year as a special student at MIT under Professor William T. Sedgwick, head of the biology department. This too I owe to my father. Sedgwick was his friend, and he steered me into his hands.

Sedgwick was a great teacher and pioneer in his field. He taught biology as the integrated science of life—all life. It was a refreshing advance beyond the old descriptive and taxonomic zoology and botany. Here I first observed living bacteria under the microscope, including the typhoid bacillus with its cilia. Also there was a bit of embryology. The concept that ontogeny is the repetition of phylogeny emerged, and as a piece of weighty evidence in favor of evolution, I found it thrilling.

Sedgwick, together with Edmund B. Wilson, was author of a textbook which itself was to me one of the great books. Its title was *An Introduction to General Biology.* I have the copy in my bookcase today. The point about it is that it embraced biology as a single subject at a time when most universities and colleges in the United States had separate departments of zoology and botany, each with their own textbooks. Many still do today. It was a forward looking book.

The Tech year was a strange interlude. It was not a sort of thing included in those days (or maybe in these), in any orthodox American educational program. But for me it was truly fateful. At this stage I determined to become a career biologist, and although soon after I shifted to medicine, a strong interest in its biological aspects has remained with me for life. It was somewhere at the interface of Tech and Harvard College, to which I went next for four years, that the shift from basic biology to the applied biology of medicine came about, but how or why it occurred, I can no longer recall. In any event it was no radical turning, for although medicine is far more than applied biology, yet applied biology is certainly a part of it. Today, however, medicine stems also from biochemistry, physics, psychology, and sociology. Indeed medicine can be said to be not a science in its own right, but rather a professional calling, or discipline, with definite and specific objectives, to reach which it will draw from the knowledge to be found in any of the basic sciences or arts which proves useful in meeting them.

Through practice also medicine acquires a vast stock of experience of its own, of how to deal with human beings in matters related to their health. I believe that the thought of practice was a factor in

swinging me from basic biology to medicine, but I cannot be sure. Perhaps if I had ever had that deep Freudian analysis I would know. But I never did have it, and that is something I regret somewhat. One may justifiably at this juncture ask why does anyone go into medicine, but there isn't time this evening to go into all that. I have told you that I don't quite know why I did. Nevertheless I did and have never regretted it.

Having chosen such a profession as medicine, however, the problem next becomes how to prepare for it. In the last half century or so in the United States this has been done in the liberal arts college (a uniquely American institution), and to a minor degree in the undergraduate courses of the great engineering schools. MIT, for example, sends 15 to 20 students to medical schools each year and has done so for a long time. The objective in college is twofold—to prepare for the professional education which is to follow, and to pick up a modicum of general education more advanced and of higher quality than that provided by the secondary school system.

I tried to do just this in Harvard College in the first decade of the century. In those days there was a totally free elective system. Only one or two courses were prescribed. C. W. Eliot, who was then president, believed in offering a magnificent array of courses and then letting each student choose what he liked. If the student saw fit to select a foolish assortment, that was his business, not the college's. To get a bachelor's degree one had merely to pass 17½ courses with an average of *C*. Many went to college in those days, if they could afford it, because it was the fashionable thing to do, rather than in the genuine pursuit of learning.

I can truthfully say that I took the college educational opportunity seriously myself. From the present vantage point I can see certain mistakes that I made, and on the basis of them I can give some warnings. In the first place, I overdid the strictly premedical part of the program, taking some subjects repeated in the medical school. I have also long regretted that I had not more mathematics and modern languages. On the basis of my own experience, and from what I learned from students from a variety of universities, liberal arts colleges, and engineering schools, whom I have interviewed for medical school, I would recommend that the premedical student take the minimum of premedical requirements but try to make excellent records in these. Then he should really see to it that his general education doesn't suffer. It should be recalled that a certain amount of basic science is today a legitimate part of general education, but this must be balanced by an adequate exposure to the humanities.

In my case, in Harvard College I had a lovely time in philosophy under some truly great scholars, and to some degree in history, sociology, and economics, but I have the feeling now that under the completely free elective system of those days I chose what I found delightful and easy and sidestepped some of the subjects which for me were more rugged. I fancy that nowadays with more directed undergraduate curricula, such scholastic evasions may be less easy.

The premedical student of today is to some degree in a difficult position, far more so than in my youth. He may greatly desire to become a well educated person in college, but he also wants to become a doctor, and to do the latter he must gain admission to a medical school. If then, to get into medical school, which we must admit is a highly competitive business, he feels that he has to get the highest possible marks in prescribed premedical studies, he gives his major effort to these. Often this will be to the detriment of his general education. A real dilemma!

I have dreamed up a program which I think might solve this problem, but so far I have not succeeded in getting anyone to try it out. It would be, briefly, for a faculty of arts and sciences to cooperate with the preclinical departments of a medical school, to offer to students a combined general and professional educational course which would run along uninterruptedly for five or six years, at the end of which time they would be qualified to enter the third year class of a medical school. There would be no difficulty in getting into medical school at that level after such an education. It is essentially what is done in Britain and on the continent of Europe. I would like to see it attempted here.

In medical school in my day, as also today, the student is exclusively on the medical beam. He has no time, and unfortunately, perhaps but little mind, for anything else. To those who love it, medicine, both in its basic (preclinical) areas and at the bedside, is all absorbing. The student who doesn't find it so, even at this late date, had better drop it and go into another calling. If he continues in medicine it will be for what he thinks it offers him in the way of material gain, and that motivation is not what is needed in medicine.

The love of any subject often is triggered off by certain teachers who set students aflame. In my medical school days I was greatly stimulated by Walter B. Cannon, professor of physiology, who first disclosed by means of x-rays the peristaltic activity of the alimentary tract and the effect of the emotions on somatic functions; also by Lawrence J. Henderson, who taught us about the reversible chemical reactions whereby the neutrality of the blood is preserved and

the respiratory gases are transported. Thus was presaged in our minds the psychosomatic medicine of today and the necessity of safeguarding therapeutically the integrity of the electrolyte balances of body fluids. Theory based on accurate observation should lead the way to sound practice. Scientific medicine—yes, but basic, not medical, science.

At this point I would like to inject some remarks on the medical curriculum. A curriculum, of course, is but a means to an end, but even so it is of some importance. I have been interested in the medical curriculum ever since student days. In my fourth year, along with some other troublemakers, I drew up a critique of the whole four-year program which we had just been through and submitted it to the faculty. It was courteously accepted and probably filed in the wastebasket, but it did us some good to write it. Since then, through the years, I have continued to be interested in curriculum reform. Twice I have served on committees which made extensive studies and submitted reports, which resulted in the taking of certain steps—inadequate, but yet in the right direction.

The chief faults in the curriculum seemed to us to be its thoroughly disjointed or over-compartmentalized character. It needed integration, both vertically and horizontally. One needed to relate anatomy to biochemistry, structure to function, and to bring both to the bedside. Trite as the saying has become, one needs to study the entire man and the environment he is obliged to inhabit. The study of man is part of general education as well as of professional. It should be the force which blends the two. And blended they should be, from start to finish.

I have long believed also that the dichotomy between college and medical education is undesirable. The student has to transfer from a faculty of arts and sciences, with little interest in or understanding of medicine, to a faculty of medicine with a similar lack of interest in general education. Some arrangement whereby general and professional education can flow along together uninterruptedly from freshman year in college to the doctorate in medicine, always related meaningfully to one another, is, to my mind, urgently needed. The concentration upon medical professional matters to the exclusion of all else, from medical school on, can make the doctor of medicine, as far as society is concerned, a narrow person.

Progress in medicine, and this includes medical education, is largely accomplished by the trial and error method. Observations are made, ideas are generated, then they have to be tried out in practice. If new applications turn out to be good, they survive. If not, ultimately they will be discarded; but sometimes the latter takes a long time. In education, if things are not to remain static, experiments must be tried.

Some medical schools now are making curricular experiments. Notable among these are the University of Colorado and Western Reserve. You here at the University of Kansas have recently rebuilt your first and second year curricula and in your clinical years are making an extensive study of the value of preceptorships—that is to say, farming students out to practitioners for practical experience. I was much interested in Dean Wescoe's recent paper on the subject in the September number of the *Journal of Medical Education*. This type of education has been criticized by such people as Robert F. Loeb and W. Barry Wood, but personally I think it is an experiment that should be tried, and I would postpone judgment until it has had a fair trial. If it is good, it will survive. If it isn't, it won't.

The point of view of the gentlemen I have mentioned is that practical training of this sort at the undergraduate medical school level may jeopardize that thorough grounding in the basic sciences upon which medicine rests and prevent the maintenance of practice at the highest possible scientific levels. I do not believe that this has to happen. Finally, new schools starting from scratch, such as the medical school of the University of Florida or U.C.L.A., have a wonderful opportunity to try out new ideas in methods of medical education.

After medical school comes the house staff experience. In my day the intern was supreme at this level. There were no residents! At the Massachusetts General Hospital we had a 16-months straight medical service (there was a similar one in surgery), organized on a vertical or progressive basis. Each four months we shifted to posts of increasing responsibility. The senior interns in medicine or surgery were the kingpins of their services. They really carried the care of patients; the attending doctors were largely in the role of teachers and consultants. It was a wonderful experience for the lucky ones who obtained such internships, but it was a system which did nothing for fourth year medical students. The latter in those days got little if any genuine responsibility in the care of patients.

In the intervening years all this has changed, and for the better. Toward the end of my internship there arrived in Boston to become medical chief at the Massachusetts General, and professor of clinical medicine at Harvard, Dr. David L. Edsall. Later he became full time dean of the Harvard Medical School. Edsall, like Sedgwick earlier, played a vital role in determining the direction of my career. At once he began making innovations. Together with

Henry A. Christian and Harvey Cushing, he introduced to Boston the clinical clerkship which had recently been imported from Britain by Osler to Hopkins. This was a great advance in medical education because it brought the undergraduate medical student to the bedside and gave him professional responsibility in a way he had never had it before. This was good in my opinion chiefly because the acceptance and meeting of responsibility is one of the most powerful maturating forces we possess. Only last May I had the opportunity to walk the wards of St. Bartholomew's Hospital, London, with British ward clerks, and I looked upon them as the prototype of our own. Their keenness to rest practice on sound theory was similar to that of ours.

Another great advance made by Edsall, Christian, and Cushing lay with the introduction of full time teachers in the clinical subjects. The preclinical subjects had long had full time teachers, on much the same basis as did university faculties of arts and sciences. The clinical teachers in medicine, however, had all been local practitioners, some of great distinction, who gave their teaching services on a voluntary basis and made their living by their practice. Such men were, and still are, of great importance in medical education, but the growing complexity of scientific medicine made it necessary to introduce certain salaried persons who would develop teaching clinics, organize teaching programs, and promote research activities, all of which are essential in the total medicine of today. Along with this was the steady growth and development of the residential hierarchy as an institution for the further education of physicians, surgeons, and medical specialists at the house staff level.

The influence of these new developments on me, although they were but in their infancy, was considerable. Prior to Edsall's arrival, I had taken it for granted that on finishing my internship I would open my office and set myself up in practice. Having previously shifted from biology to medicine, I would go the whole way and practice my profession.

Edsall changed all that. He sold me the idea of going into full time or academic medicine, and I remained in it until reaching the university's retiring age five years ago. I cannot spend much time tonight discussing that long period. I have already given somewhat of my attitude toward medical education. Essentially its objectives are to produce people who will practice medicine, who will teach it, and who will advance the boundaries of medical knowledge by research. Let me now, therefore, say a few words about the last of these—research.

In its essence research may be said to be man's conscious effort to find new facts by exploration, to relate them one to another, and to derive from them new principles and generalizations. It is the consequence of man's insatiable curiosity and of his innate desire to improve his own lot. In the long range view, progress through research discloses itself as an evolutionary process. We may draw an analogy between the research performed consciously and with intent by man and unconscious research on the part of nature. As man sets up experiments to find new truth, so does nature, in the case of living organisms at least, make experimental types through the process of mutation and test them out in the struggle for existence. Thus we believe has the evolution of species come about, and in similar fashion so has man acquired new knowledge and learned to improve his ways of approaching his objectives. As does nature, under an irresistible drive to procreate, force life to adapt itself to every environment, no matter how inimical, capable of supporting life at all, so does man under his drive to know, inquire into and explore every region of his cosmos to which his sensibilities and his intelligence direct him.

Thus in medicine we have what is called clinical research, which is nothing more or less than scientific inquiry into the causes of disease and the mechanism of morbid processes as we perceive them in our patients, and the search for means of relieving them. In my own experience it was under the influence of Edsall that I first became caught up in the budding clinical research of my early professional days. Patients began to be kept longer in hospital in order that special studies could be made of their cases. New methods of measuring functions were devised. The relation of clinical research to research at the basic science level became a two-way affair. Observations made first on sick individuals sometimes directed the course of basic research into new channels with the consequent formation of new hypotheses and concepts. Or something emerging at the basal level could be put to use for the study or treatment of patients. Development along such lines during the last 40 years in the United States has been prodigious.

During the long stretch of my life in full time medicine after World War I (1919 to 1951), there was no important change in direction. Rather it was a period of intensification of effort along the lines already described. Certain convictions have grown as a result of this experience, as for example, that the more sweetly blended are medical practice, research, and education, the better it will be for everybody. Another is that we need to do research in the social and economic fields of medicine as well as in the biologic. We must devise better methods of bringing high quality medical care to the people, and distrib-

uting its cost. What is best for patients in this regard must take precedence over what is best for doctors.

In 1951 there did come a significant turning point in my professional life. I reached the university's retiring age. And that brings up the last matter I would like to discuss with you, namely the philosophy of retirement. That will give me a chance to bring in Professor Dimond's hobby item. Long before I had reached this point I had been thinking about it, and had arrived at the conclusion that for happiness one should continue to work at something satisfying as long as either God or man will permit. But the pace of work must slacken, and leisure intervene. Leisure itself is a problem: what shall one do with it? The hobby or hobbies can take over part, or all of this, if it or they be truly soul satisfying. There is a point I must make, however, about hobbies. They cannot successfully be developed overnight when the deadline of retirement from a life work has been reached.

The hobby is a tender plant which must be planted early and tenderly nurtured. If so treated it will grow, slowly at first perhaps, but it is all set and ready to grow vigorously when leisure comes. An individual, however, who has worked hectically and competitively may have found no time for leisure or the development of a hobby. Complete retirement for such a one may leave him in a vacuum in which he deteriorates rather rapidly. Professional people are less exposed to this danger than those in a highly competitive business—positions with enforced retirement ages. It is interesting that Mr. Winston Churchill for many years has been a competent painter in oil. His book, *Painting as a Pastime* is a small masterpiece on the philosophy of hobbies. Every doctor should read and heed it. President Eisenhower paints; also Dr. Killian, the president of Massachusetts Institute of Technology. Yes, you have guessed it—I paint in watercolor myself. I began to do this in 1928 and have been at it, without improving much, but getting great pleasure from it, ever since. It is clearing to the mind and relaxing to the body, to sit and paint a lovely scene.

If the four-day week which Mr. Nixon threatens ever comes to pass, there is going to be a lot of new leisure. It will not come, I am sure, to doctors, but doctors must be prepared to give patients some insights into its possible consequences. Early in life doctors too should develop hobbies which can take up the slack in later life. While they work hard through the prime of their lives, they should relax occasionally with the hobby to keep them company.

I think, ladies and gentlemen, that this will be enough for me to say this evening. I apologize for talking so much about myself, but I really did not know how to avoid this if I was to fill in any measure Professor Dimond's prescription.

I thank you!

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The fundamental qualities for good execution of a plan are, first, naturally, intelligence; then discernment and judgment, which enable one to recognize the best methods to attain it; then singleness of purpose; and, lastly, what is most essential of all, will—stubborn will. A leader is above all things an animator. His thought and faith must be communicated to those he leads. He and they must form as one at the moment of executing a plan. That is the essential condition of success.

—*Marshal Foch*

The Cardiac Pacemaker

Its Use for More Than Seven Months in One Patient

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Because of increasingly frequent reports of successful treatment of cardiac arrest with external electric stimulation,[1,2,3,4] we are reporting the following case in which the cardiac pacemaker kept the patient alive for more than seven months.

A 30-year-old white male was admitted to the Veterans Administration Hospital, Kansas City, Missouri, on March 29, 1954, as a transfer from another hospital where the diagnosis of Adams-Stokes syndrome had been made. In December, 1953, the patient had had a sudden attack of syncope without any premonition, from which he recovered completely and returned to his work. He had had two similar attacks since.

Past history includes scarlet fever at the age of six. Prior to and following this, the patient had many throat infections. There was no history of rheumatic fever, diphtheria, or syphilis. There was no family history of epilepsy.

Physical examination: The patient was a tall, thin man of the stated age, in acute distress, semicomatose, mildly cyanotic, with no response to questioning or stimuli. The pupils were small and reacted only minimally to light and accommodation. Funduscopic examination revealed no exudates, hemorrhages, or papilledema.

The blood pressure was 140/70. Pulse was 20 and irregular. Radial pulses were equal bilaterally as were the femoral pulses and the dorsalis pedis. The ventricular rate was 20 per minute, irregular, with frequent ventricular contractions, occasionally in bigeminal sequence. The heart was enlarged. The point of maximal impulse was the sixth intercostal space at the anterior axillary line. No thrills were felt. The heart sounds were distinct with a slow bigeminy; in the interval between ventricular heart sounds, three or four soft sounds could be heard which were interpreted as auricular contractions (fourth heart sound). An extremely high-pitched squeal of short duration was heard in the apical area.

The mucous membranes were dry and pale. There was good expansion on deep inspiration of the chest. The lung fields were clear to palpation, percussion, and auscultation. Supernumerary mammary glands were present bilaterally. There was no abdominal tenderness. There was no clubbing, cyanosis, or gross deformities of the extremities, and there was no edema. The remainder of the physical examination was within normal limits.

Laboratory and x-ray examination: Chest x-ray showed left ventricular enlargement and no evidence of lung pathology. X-rays of the skull were negative. Upper gastrointestinal series were negative. There was no evidence of hiatus hernia. Intravenous pyelograms were interpreted as showing slight hydronephrosis on the right side.

The patient reported here, a 30-year-old male, was kept alive for more than seven months through the use of the cardiac pacemaker. This is thought to be the longest period of time over which the device has been effective.

Complete blood count was within normal limits. Serology was negative. Blood sugar, nonprotein nitrogen, chlorides, sodium, potassium, CO_2 combining power, calcium, phosphorus, alkaline phosphatase, total protein and A/G ratio were all within normal limits. The total cholesterol was 80 mg. per cent with 37 per cent esters. A repeat cholesterol was 143 mg. per cent with 29 per cent esters. The remainder of the hepatogram was within normal limits. Sedimentation rate was normal. Congo red test for amyloidosis was negative. Lupus erythematosis cell test was negative. Repeated urinalyses were negative. Stool was negative for ova, blood, or parasites. Trichinella skin test was negative. Histoplasmin skin test was positive. Purified protein derivative skin test was negative. Toxoplasmosis skin test was positive, 1:64 dilution. A rheumatogram showed a low-grade degenerative tissue reaction. Bone marrow examination was negative on two occasions. Spinal fluid examination was

From the Veterans Administration Hospital, Kansas City, Missouri. Reviewed in the Veterans Administration and published with the approval of the Chief Medical Director. The statements and conclusions published by the authors are the result of their own study and do not necessarily reflect the opinion or policy of the Veterans Administration.

within normal limits. Two electroencephalograms were suggestive of diffuse brain damage.

Biopsies of the gastrocnemius and biceps muscles were performed on three separate occasions. Some muscle fibers which appeared somewhat swollen contained fibrillary sarcoplasm, among which scattered vacuoles were encountered. Most muscle fibers appeared normal with well preserved striations. A mild degree of connective tissue edema was observed. The stroma was hypercellular. Scattered throughout were rare, small clusters consisting of lymphocytes, polys, eosinophils, and large mononuclear cells. Fibrinoid degeneration specifically was absent. The wall of the arterioles was slightly thickened. These findings were interpreted by the Pathology Department as questionably compatible with, but not diagnostic of, dermatomyositis.

Electrocardiogram on admission showed a complete heart block. Subsequent electrocardiogram showed a rate of 100, left bundle branch block with a prolongation of the PR interval, left ventricular preponderance, and marked depression of the ST segments in V_3 through V_6. Many electrocardiograms were taken during the patient's hospitalization with practically the same findings. During the latter part of the patient's hospitalization, attempts to obtain electrocardiograms were unsuccessful inasmuch as the pacemaker was frequently turned on, and when the pacemaker was turned off only auricular contractions with no ventricular response were recorded. An electrocardiogram typical of these attacks of ventricular asystole and ectopic ventricular response with the pacemaker is reproduced (Figure 1).

Hospital course: Oxygen and ephedrine were given on admission and ephedrine was continued, 3/8 grain every two hours, which maintained the pulse at a rate between 90 and 110. The patient was then also placed on Isuprel, 10 mg., sublingually.

On the fourth hospital day he had an episode of profuse sweating without loss of consciousness and with frequent episodes of ventricular asystole. These episodes were controlled by intravenous injection of epinephrine. In order to control these attacks more effectively, a cardiac pacemaker was made available through the courtesy of the Cardiovascular Laboratory of the University of Kansas Medical Center, and later on the hospital purchased its own pacemaker.

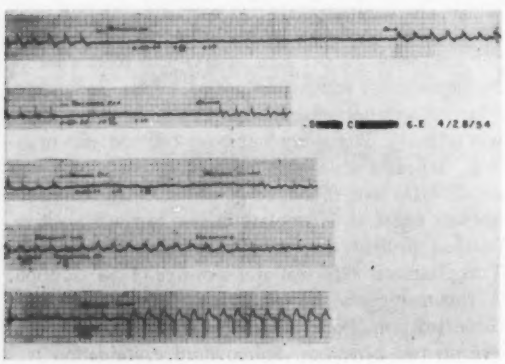

Figure 1

Early in his hospital course, the patient was free from attacks of ventricular asystole for periods as long as 15 days. Between attacks he appeared perfectly normal, felt well, and was well disposed. Occasionally an apical friction rub was heard, especially following exercise, and as the friction rub disappeared, the high-pitched systolic squealing murmur could again be heard at the apex. At other times neither the friction rub nor the murmur was audible.

Because of the almost fixed pupils, a syphilitic gumma was considered, and the patient was given 18 million units of penicillin without any noticeable change.

In June, 1954, the patient began to have more frequent attacks of ventricular asystole with convulsions and was kept on the pacemaker almost continually. He learned how to use the pacemaker and turned it on frequently himself when he was feeling the onset of the attacks of ventricular asystole, because he was afraid the physician or nurse might arrive too late. He was digitalized, and atropine and Pronestyl were added to his treatment, without any noticeable change.

A trial with cortisone and ACTH was made without improvement. During the last few weeks of hospitalization the pacemaker was continuously required because the patient had frequent episodes of ventricular asystole and syncope, sometimes as many as 10 to 15 attacks a day. He developed numerous minor burns at the site of the chest electrodes and was treated with topical application of gentian violet. In the middle of November it became necessary to make a substantial increase in the voltage of the pacemaker in order to obtain a heart beat. Nevertheless, the patient began to have repeated heart blocks and finally expired.

Postmortem Examination

Gross autopsy findings: The body was that of a lean, tall, young, white male. The cardiothoracic ratio was 15/28. The abdominal viscera were in a normal position and not adherent to each other. The lungs showed a slight amount of congestion but no evidence of aspiration, inflammation, infection, or tumefaction.

The heart was enlarged and weighed 510 grams. The epicardium was smooth and shiny. No hemorrhage, exudate, or scarring was present. The heart was more flabby than usual. When sectioned, it offered a slight meaty resistance. The myocardium was

red-brown. The columnae carneae were moderately hypertrophied, and the papillary muscles were markedly so. The left ventricle measured 2 cms. in thickness, the septum 1.8, and the right ventricle .2 cms. All chambers were markedly dilated. The lining endocardium was thin and smooth. No thrombi were present. The foramen ovale was closed. There were no interventricular septal defects. The mitral and tricuspid valves were slightly dilated, with no calcification; neither was the aortic ring calcified or sclerotic. The only abnormality was a minimal (1 by 1 mm.) sclerosis in one leaflet of the mitral valve at the free edge. The coronary arteries were patent. Cut section of the myocardium showed no areas of softening, hemorrhage, or infarction.

The aorta showed a small, smooth plaque of atherosclerotic deposition, also approximately 1 by 1 mm., at the level of the orifices of the renal arteries, but no other atherosclerosis.

The brain showed no areas of scarring, tumors, or inflammation. The vessels at the base of the brain were free from any atherosclerotic disease, and no other anomalies were present.

The remainder of the gross anatomical examination was not remarkable.

Microscopic examination: Cardiovascular System—The mitral valve and the ring had some scattered vacuolization and one small area of calcification, approximately the size of an erythrocyte. Some vacuoles were also seen in the interstitial tissue. There seemed to be little evidence of increase in the interstitial fibrous tissue. There were eosinophiles scattered at widely spaced intervals.

The spleen showed much eosinophilic interstitial material with a large number of immature eosinophiles.

The adrenals were not remarkable. The muscle showed isolated vacuoles, presumably representing fat, scattered through the myofibrils.

Neither the bone marrow nor the brain showed any abnormalities.

In summary, then, this patient showed minute areas of calcification at the free edge of the mitral valve, and there were minor changes consisting of scattered eosinophiles, fat, vacuoles, and myofibrillary changes.

The changes in the vessel walls of the spleen and muscle, while not inconsistent with a beginning collagen disease, were by no means diagnostic. On the basis of the anatomical findings presented, the pathologists stated that it was not evident why the heart showed the degree of hypertrophy and dilation found at autopsy.

Unfortunately a detailed histological examination of the A-V node could not be performed as intended. Only the routine microscopic examination of the heart was done.

Discussion: It is obvious that the attacks of Adams-Stokes syndrome were due to anoxia of the conduction system. We were at a loss, however, to determine the underlying anatomo-pathologic condition responsible for the production of the anoxia, as we were at a loss to determine the precipitating mechanism causing these attacks.

Many conditions have been considered in the differential diagnosis, such as A-V block due to acyanotic congenital heart disease, congenital anomalies of the coronary arteries, subendocardial fibroelastosis, syphilis, tuberculosis, histoplasmosis, toxoplasmosis, so called primary amyloidosis of the heart, glycogen cardiomegaly, sarcoidosis, porphyria, tumor of the heart, either primary or secondary, diseases of the collagen group, "idiopathic" myocarditis and "idiopathic" ventricular hypertrophy.

Idiopathic myocarditis and idiopathic ventricular hypertrophy were the most seriously considered conditions in the differential diagnosis, and postmortem examination revealed left ventricular hypertrophy.

Mesotheliomas of the myocardium involving the region of the bundle of His, with clinical manifestations of Adams-Stokes attacks occur occasionally.[5,6,7,8] A tiny mesothelioma limited exclusively to the A-V node cannot be definitely ruled out since no detailed examination of the A-V node was performed. However, routine microscopic examination of the patient's heart failed to reveal mesothelioma cells elsewhere.

Because of the biopsy report of a gastrocnemius muscle suggestive of collagen disease, especially dermatomyositis, the possibility of that or of any other disease of the collagen group had to be seriously considered during the patient's life. However, the postmortem microscopic examination failed to establish any clear-cut evidence of collagen disease, although the changes in the vessel walls of the spleen and muscle, the minor swelling of the muscle fibers with the scattered vacuoles, and the minor degree of connective tissue edema were considered by those in the Pathology Department as not inconsistent with a beginning collagen disease. But they were by no means considered as diagnostic.

The pathologists could not find any pathological basis for the hypertrophy and dilation of the heart found at autopsy. One of the consultants in pathology who reviewed the slides stated that he would certainly not have made the diagnosis of collagen disease had this possibility not been called to his attention by another physician. The slides were also reviewed by Dr. Helwig,* and it was his opinion that the microscopic examination does not allow the diagnosis of even an incipient collagen disease.

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* Appreciation is expressed to Dr. Ferdinand C. Helwig, consultant in pathology, Veterans Administration Center, Wadsworth, for having reviewed the slides.

There have been reports in the literature of cases of cardiac hypertrophy of unknown cause.[9,10,11,12,13,14] Those cases were patients with heart failure of unexplained origin in whom postmortem examination revealed ventricular hypertrophy with vacuolization and some dilation of the muscle fibers, whereas the coronary arteries were patent. Yet they all showed some underlying condition such as interstitial emphysema, fibrosis, hypertension, bronchial asthma (in the cases reported by Levi and Van Glahn[9]), or mural thrombi and thromboses of the thebesian vessels (in the cases reported by Flynn and Mann[10]).

Of the 49 cases of so-called idiopathic ventricular hypertrophy referred to above, not one, to our knowledge, showed clinical features comparable to those shown by our patient.

Whatever the cause and the underlying mechanism for production of the attack of Adams-Stokes syndrome, the fact remains that the patient was kept alive for seven months because of the pacemaker.

Although we do not have proof, it is our firm belief that the usual medications such as intracardiac adrenalin, Isuprel, etc., would not have stopped the attacks; if it were not for the cardiac pacemaker, the patient would have succumbed much earlier during one of his attacks.

The cardiac pacemaker was used according to the technique as described by Zoll.[1]

Several series of patients with various types of cardiac arrest and Adams-Stokes syndrome have been described in which the artificial electric pacemaker has been used with success,[1,2,3,4] even up to a period of seven days.[15] We believe the case presented here represents the longest period of almost continuous use of the pacemaker. It was effective inasmuch as it produced a ventricular ectopic contraction. While it was not a regular contraction of the ventricle through the normal A-V conduction system, it was nevertheless effective enough to produce a contraction of the myocardium and eject blood from the ventricle into the peripheral circulation.

At the onset of attacks of the Adams-Stokes syndrome, the patient's face and hands showed a snow-white pallor and he became weak and sometimes unconscious. Almost immediately after the cardiac pacemaker was turned on, his color and his consciousness returned and he felt better. Usually the patient could sense when his own cardiac rhythm was restored and the pacemaker could be discontinued, as he could also determine when the voltage of the pacemaker should be increased or decreased.

Unfortunately, after having been in use for the above mentioned period, the cardiac pacemaker was not effective in preventing the fatal outcome during one of his attacks of ventricular asystole. It is known that after a patient is continuously on the pacemaker for a certain length of time, the contraction becomes gradually less effective.[2]

Summary

A patient with attacks of Adams-Stokes syndrome of unknown cause is presented. Clinical examination showed left ventricular hypertrophy and postmortem examination, including a routine microscopic examination of the heart, disclosed only left ventricular hypertrophy of unknown cause. Unfortunately it was not possible to perform a detailed microscopic examination of the A-V node.

The patient was kept almost continually on the pacemaker for more than seven months which, to the best of our knowledge, is the longest period of time for the use of the pacemaker.

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Poisoning

A Study of 293 Patients Seen at One Hospital in a Two-Year Period

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The Committee on Child Welfare of the Kansas Medical Society has been interested in establishing a poison control center in some of the larger communities of Kansas. The Kansas Chapter of the Academy of Pediatrics, in addition to some lay organizations and agencies in certain communities, has also been pursuing this goal. In an effort to determine whether the need for such a center exists in Wichita, the author undertook to examine the outpatient records at Wesley Hospital in this city.

By the term "outpatient" the author means "patient visits" to the Emergency Room in this hospital for whatever reason. In the years 1955 and 1956 there were 35,589 such patient appearances. On each visit a card was filled out with a notation as to the type of complaint, the nature of the accident, the treatment proffered, and the disposition of the patient. The cards were then filed in the Emergency Room office by weeks in an alphabetical fashion.

From inspection of the cards it is impossible to determine what transpires after the patient leaves the hospital, and, as there is no effort made to code the diagnosis according to the Standard Nomenclature of Disease, it is occasionally difficult to tell exactly what is meant by certain notations. Unfortunately, such a state of affairs is occasionally true with the more formalized inpatient records as well. However, review of these records does give at least a partial picture of how important immediate information regarding poisons and poisonous products might be in this type of medical practice.

Not all of these problems are met in the Emergency Room, of course, and not all of them in the usual working hours. But because the Emergency Room is open 24 hours a day, and because the patient often first thinks of hastening to the hospital, it appears that the logical place for the location of a poison control center is there.

For the purpose of this investigation, contact poisons such as poison ivy or poison oak, stings of insects, bites of spiders, and intoxication from alcohol are omitted. Likewise patients who presented themselves because of insulin reaction are not included. Thus the study is limited to ingested medications with toxic actions, miscellaneous products with poisonous potentialities, inhaled poisons, and ingested poisonous plants.

Out of the total number of 35,589 patient visits there were 293 patients with a suspected or known poison problem, or 0.82 per cent of this local patient population. For comparison purposes it might be noted that at the same time there were 82 patients with foreign bodies in the stomach, 67 with foreign bodies in the throat, 63 with foreign bodies in the nose, and 32 with a similar problem with the ears. And in passing it was noted that in this group there were four males of assorted ages who made an emergency room appearance for the reason that the penis was caught in the trouser zipper (0.01 per cent).

The 293 patients with a poison problem were almost equally divided between the sexes: 51 per cent were males, and 49 per cent were females. The list includes 65 (22 per cent) adults and 228 (78 per cent) children.

The need for establishment of a poison control center in Wichita is apparent from an analysis of patients seen at Wesley Hospital, Wichita, during 1955 and 1956 for complaints referable to ingestion and inhalation of toxic substances.

As might be expected in the older age classification, the ingestion of many toxic items was purposeful. While it is manifestly difficult to ascertain from several of the records if the purpose was suicide, one might assume that in the majority of instances it was, or at least it was meant to look like it was. In this group there are 58 patients. One-half, or 29, elected to accomplish the purpose by the ingestion of barbiturates. Hospitalization was ordered for 26, while three were treated and sent home.

Aspirin in massive doses was preferred by seven individuals. Their action necessitated the admittance of two, while five were discharged. In two cases Clorox was the selected agent, and both patients were admitted. In the two instances in which Lysol was used, one was admitted. An undiagnosed agent was responsible for the appearance of three patients. Lavage and the use of the universal antidote permitted one to return home, while the other two

were admitted for further study. The remaining patients tried the following substances one time each: hemlock leaves and plant substance, floor cleaner, large quantity of thyroid extract, Dexamyl or Dexedrine tablets, potassium permanganate solution, Mercurochrome, iodine, permanent wave neutralizer, chloral hydrate, bug poison, copper sulphate solution, turpentine, Sani-Flush, and Johnson's floor wax.

The procedural technique most frequently used in this group for therapeutic ends was that of gastric lavage. This was accomplished 41 times, while apomorphine was used twice and ipecac once. Caffeine sodium benzoate was administered eight times, Metrazol in three instances, and Sodium Amytal and magnesium sulphate in two patients each. Morphine, sodium thiosulphate, universal antidote, Synkavite, Nalline, picrotoxin, and starch solution were employed once each. In all, of this group of 58 adults, 39 were admitted for further treatment.

Of the remaining adults appearing on the list—seven in all—only two were detained. This group was composed of patients who were presumed to be poisoned by inhaled gases. Sulfur gas, fumes from a fat disposer, and carbon monoxide gas were the only gases mentioned in the emergency room records.

Among the children seen (228), the most commonly mentioned ingredient with toxic potentialities was aspirin. Accidental ingestion of this drug accounted for the appearance of 84 patients. The stated age varied from six months to six years. In the age range of six to eleven months, there was one victim. In the age range from 12 to 23 months, these were 15; in the 24- to 35-month range, there were 40 sufferers; and above this age period there were 28. As might be expected, the sex variation was slight; 40 of the children were females and 44 were males. It is also evident that the age of approximately 36 months is the peak age of curiosity for these small patients. Of this group, three were sent into the hospital, lavage was employed 74 times, ipecac given two times, apomorphine one time, sodium bicarbonate once, and the universal antidote once. In five instances no specific therapeutic measures were undertaken.

Aspirin is common around the home, of course, and the inquisitive child may often witness an adult taking it. Likewise the child may be aware that the adult takes other specific medications of various sorts—often at mealtime—and hence may feel obliged to try some too. This type of medication experimentally taken was responsible for the appearance of 42 other children.

Dexedrine intoxication was the reason for one admission, and barbiturate poisoning caused the admission of two patients. The remainder were sent home. No specific therapy was offered for four, ipecac was administered in two, apomorphine given in two, and lavage accomplished in 35. In one instance each Butisol sodium, Luminal, Coramine, penicillin, and universal antidote were therapeutically employed.

The medications taken, with the number of times they were involved indicated in parentheses, were as follows: unknown (8), Ex-Lax (8), barbiturates (7), thyroid extract (4), reducing pills (2), antihistamine (2), prescription for cold (2), Dexedrine (1), bile salts (1), Dramamine (1), Alka-Seltzer (1), Anti-Colic prescription (1), ephedrine (1), Demerol (1), paregoric (1), diethylstilbestrol plus penicillin tablets (1) and creomulsion (1).

The children consumed quite a number of miscellaneous items as well. For this type of complaint there were 102 visitors. Chief among this type of offending substances were the distillates—gasoline, kerosine, and turpentine. There were 15 who had consumed this type of toxin; three were admitted. Next in the list were insecticides, and there were nine so afflicted. Furniture polish was the offender in six. Rubbing alcohol and "rat" poisons each accounted for five patient appearances. One of the rat poison patients was hospitalized. Cleaning fluids prompted four visits, and talcum powder forced the appearance of three. One of the latter group was admitted, as was one of the three patients who had eaten moth crystals or moth balls. "Poisoned food" appears on three records, but it is impossible to ascertain the nature of the "poison." All three patients were lavaged and then dismissed.

Sani-Flush, Pine-Sol disinfectant, Mercurochrome, castor beans, match tops, nail polish remover, and unknown substances caused two patients in each category to make a visit. One of those in whom the substance was unknown was sent into the hospital. Drano was ingested by one, and he was admitted. There was one case each of the following type of ingested poisons: acetic acid, ammonia, arsenate of lead, astringent, berries of an unknown type, bittersweet, bluing, boric acid, detergent of a liquid variety, "Dip-It," fertilizer of the solid variety, Glass Wax, "Hypo" solution, ink, ivory soap, lotion for hand applications, Lysol, Murine, oil, plant solvent, shoe polish of the liquid type, plant of poisonous nature, sunflower seeds, toothpaste, turpentine paste, and weed killer.

It is not surprising that in this group the situation was serious enough to require the admission of eight children, while 94 were sent back home after examination and treatment. The plan of therapy for this series of emergencies was gastric lavage in 72 instances, apomorphine in three cases, and ipecac administration in two. The universal antidote was em-

ployed in four situations, while magnesium sulphate, Hykinone, intramuscular penicillin, and vinegar were the agents used in two problems each. Dramamine, intravenous penicillin, and sodium bicarbonate each found a use on one occasion. Nineteen patients were examined and then dismissed.

In total then, over the two-year period, 41 adults were admitted for more therapy and observation and 14 children were admitted, or a total of 55 patients—0.15 per cent of the outpatients seen. However, more than 55 patients were discharged from the hospital with a diagnosis of poisoning established in this interval of time.

There were 113 such cases among 31,670 admissions, or an incidence of 0.35 per cent. Some of these cases were direct admissions and hence do not appear on emergency room records, while others were those in whom a diagnosis was not initially stated, or was discovered after the admission was accomplished. Ninty-four (83 per cent) were adults and 19 (17 per cent) were of the pediatric classification. Forty-nine males and 64 females comprise this group that collectively spent 820 days in the hospital.

The list of offending substances in the adult list is quite long. In parentheses are the numbers of times the agents appear. The list is as follows: barbiturates (14), undiagnosed (12), digitalis (9), bromine (7), Thorazine (7), Dicumarol (6), organic poison of fatty series (5), sulfonamides (3), chloral hydrate (2), serum reaction (2), spider bite (2), carbon monoxide (2), aspirin (2), hydrochloric acid (2), cocaine group (2), undetermined type of poison gas (1), hyperallergic reaction (1), undetermined type of vegetable poison (1), Dexedrine (1), potassium permanganate solution (1), thiamine (1), rauwolfia (1), varidase (1), phenol (1), ambrozoin (1), ammonia (1), camphor (1), penicillin (1), scopolamine (1), Serpasil (1), wasp sting (1), resin of unspecified type (1), sodium fluoride (1), Pavine (1), and an aniline derivative (1).

In this number there were three fatalities. A mixture of potassium permanganate, arsenical rodenticide, and a bug killer was employed as a lethal agent in a 28-year-old adult, and sodium fluoride was effective as a suicidal means in a 32-year-old patient. An adult of 55 years was the third member of this trio. Hospital records reveal that intensive therapy was employed in the first two acute cases. Their hospital stay was six and nine hours, respectively, before death supervened. The record indicates that digitalis intoxication was but one of the several contributory causes for the death of the third patient on the 16th hospital day. It seems there would have been no benefit accruing to these patients from a poison control center even if such had been in operation at the time.

In the group of hospitalized children the toxicants were aspirin (4), gasoline (3), undiagnosed (2), plant with poisonous effect (2), barbiturates (2), nitric acid (1), Mebaral (1), digitalis (1), and castor bean (1). There were no deaths.

It would be foolhardy to project the experience in one emergency room to the entire poison problem in this city. Yet the more readily available information for counteracting toxicants is, the more the opportunity of reducing mortality rate, and perhaps the morbidity rate as well. Such an effect should be made through the establishment of a poison control center.

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The wise men of antiquity, when they wished to make the whole world peaceful and happy, first put their own States into proper order. Before putting their States into proper order, they regulated their own families. Before regulating their families, they regulated themselves. Before regulating themselves, they tried to be sincere in their thoughts. Before being sincere in their thoughts, they tried to see things exactly as they really were.

—*Confucius*

Outpatient Psychiatry

A Study of Initial Contacts with Adults at a State Hospital Clinic

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The Adult Outpatient Clinic of the Topeka State Hospital started functioning in 1951. From 1951 to 1956 about 1,035 persons came to the clinic for help. The clinic is located in a community which is psychiatrically sophisticated and has a number of established and recognized psychiatric facilities such as the Menninger Foundation, the Winter Veterans Administration Hospital with its Mental Hygiene Clinic, the Shawnee Guidance Center, and the Family Service Agency. We will describe briefly the structure and functioning of the Adult Outpatient Clinic of the Topeka State Hospital.

Structure of the Clinic

The clinic has a full time director, assisted by two full time assistant directors. Each of the assistant directors supervises, on an average, five psychiatric residents, one staff psychologist, one psychiatric social worker, and a secretary. These constitute a team. Thus there are two teams, each operating as a unit within itself. The resident psychiatrists usually change service on either July 1 or January 1, after a six months' or a year's stay in the clinic for residency training.

Functioning of the Clinic

Anyone over 18 years of age who feels that the clinic may be able to help him or his friend or relative with emotional problems may contact the clinic in person, by letter, or by telephone. Usually the social worker takes care of these contacts and as soon as possible arranges a meeting during which pertinent information is gathered. The social worker interviews the relatives, if possible, to obtain a clearer picture of the problem. The patient is then informed that an intake conference will be arranged at which he will be seen by one doctor and his relative by another doctor. There is usually an interval of about one week between the time the social worker sees the patient for the pre-intake and the time of the intake conference. Before the two doctors connected with the case see the patient and the relative they receive from the social worker the information she has already collected. This is the standard procedure followed at the clinic with minor variations tailored to the needs of an emergency problem.

At the intake interview one doctor sees the patient for about 30 minutes while another doctor simultaneously sees the relative. At these meetings information is collected to answer some broad questions such as:

Can the patient be treated on an outpatient basis?

Is there a suicidal risk? If so, to what degree?

Are there factors which could prevent the patient from coming to the clinic?

What is the degree of the patient's psychological mindedness and his motivation for seeking help?

What is the attitude of the relatives toward the patient and his problem?

This study was undertaken to learn why patients who present themselves to a psychiatric clinic on an outpatient basis often fail to return for the help they have requested. It appears that patients referred by medical and psychiatric agencies are more likely to complete the evaluation procedure than are those who report on their own initiative. Highly educated patients have better completion records than those with little education. The program of interviews and evaluation is outlined.

A date is set tentatively for a diagnostic and appraisal conference. The average evaluation period lasts from four to six weeks, and the patient is usually seen once a week during this period.

After the intake conference the respective doctors inform the patient and the relative about the deliberation of the conference and answer questions that may arise. The doctor who sees the patient discusses with him the fee that will be charged for every hour that he will be seen at the clinic. In case the relative is seen at the clinic, either to collect information or to give support or understanding of the patient's problem, he is charged the same hourly fee as the patient.

The clinic believes firmly that patients should be charged for professional services rendered. The clinic

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has a reasonable[1] sliding scale fee schedule which takes into consideration the patient's gross income and the number of dependents he has.[2] The fee schedule is flexible, and the ultimate fee is determined by the doctor after consideration of the over-all situation of the patient. In some cases no fee at all or one as low as 25 cents an hour is charged.

No physical examination is given by the doctors at the clinic. If such examination is needed, the patient is requested to have one performed by his family physician. If neurological examinations or laboratory investigations such as electroencephalograms or skull x-rays are needed, the facilities available at the Topeka State Hospital are utilized.

Aim of the Study

The procedure in any adult psychiatric outpatient clinic varies considerably from one institution to another. The variation is due to (1) the inherent difficulty of trying to meet the treatment needs of the psychiatric patient and (2) the desire to foster the "working together" relationship of the clinic and the community. "The independent clinic with its greater degree of freedom to restrict patient service time runs the risk of isolating itself by forgetting the needs of the total community and overlooking the mental health aspects of the community."[3]

Public clinics, like the one at Topeka State Hospital, on the other hand, are confronted with tremendous patient loads because of an obligation to accept for service anyone who comes along from the area served. It seemed to me, therefore, that an analysis of patients who came to the Outpatient Clinic at Topeka State Hospital may bring forth certain conclusions which would be useful, not only to this clinic in future, but perhaps to public psychiatric clinics in general. The study was limited to the initial six weeks' contact of patients with the clinic with a view of finding out how our particular intake procedure affected patients in their early associations with the clinic.

Plan of Study

The author studied records of patients who came to the clinic during the 1956 calendar year. Attention was restricted to information from the time the patient first made contact with the clinic until he was presented at the diagnostic and appraisal conference.

Results and Discussion

1. Three hundred thirteen persons made contact with the clinic, but only 205 came for the pre-intake meeting. More than one third (108) did not come for the pre-intake conference. The records of those 108 cases are scanty since many contacts were made by telephone. Therefore it is difficult to determine the factors responsible for this significant dropping out.

One patient who was brought to the clinic by his brother told the social worker, "I detest being examined at the state hospital." The fact that this clinic is attached to the state hospital creates more difficulties for the patient than if the clinic were elsewhere in the community. Popular prejudice against a state hospital still exists. This factor might keep some patients away from this clinic.

2. A total of 36 patients (16 males and 20 females) did not complete the evaluation procedure, i.e., pre-intake, intake, evaluation interviews, diagnostic and appraisal conference. One hundred sixty-nine completed the procedure. Of these, 77 were males and 92 were females. The 36 patients who dropped out did so for many reasons, discussed in detail in subsequent headings.

It should be mentioned that though the psychiatrist uses the term "evaluation," his concept of that word and the concept of the patient or the relative may not be the same. It was found in a few instances that the patient considered the term "evaluation" as a criticism or a judgment, which viewpoint made it difficult for him to follow through the procedure. It is possible that use of the traditional word "examination," which has a medical origin, may perhaps suit the purpose better.

Another factor worthy of mention is that evaluation interviews aimed at collation of data made the patient tense or defensive in some instances. There is a temptation for the doctor to get a detailed history so that he can make a meaningful presentation at the staff conference. This approach was found in some instances to be "penny wise and pound foolish" since it caused some patients to drop out of the evaluation procedure. On the other hand, in some patients this approach was found to be useful since it lent structure to the evaluation interviews and diminished the intensity of the transference relationship. The technique during the evaluation interviews, therefore, should be flexible to suit the special problems presented by each patient with the object of helping him complete the evaluation procedure.

Of 169 who were considered to have completed the procedure, 58 were given definite instructions and appropriately disposed of; for example, recommendation was made for hospitalization, or boarding home placement, or suitable environmental manipulation. In these cases it was the impression of the staff that psychotherapy was not indicated.

3. Table I shows how distance from their home to the clinic affected patients who completed or failed to complete the evaluation procedures.

The table shows clearly that 63.4 per cent of the 205 patients came from within a radius of 50 miles from the clinic, and this number dropped significantly

TABLE I

DISTANCE IN MILES FROM HOME TO THE CLINIC

Miles	*Completed Evaluation*	*Did Not Complete Evaluation*	*Total*	*Percentage of Incomplete Cases*
50	130	19	149	12.7
100	27	10	37	27.0
150	9	4	13	30.7
200	2	2	4	50.0
250	1	1	2	50.0
Total	169	36	205	17.5

as the distance increased. The number of patients who dropped out during the evaluation was 12.7 per cent for the first 50 miles, and this drop increased to 27.02 per cent as the distance doubled to 100 miles. This correlation is significant and easily understandable.

4. Patients were studied in terms of the source of referral. Fifty patients came to the clinic by themselves (hence called self-referrals). Of these, 43 completed evaluation and 7 did not. Eleven patients came to the clinic at the insistence of friends and relatives; of these, 10 completed evaluation and 1 did not.

Psychiatric agency referrals include patients referred to the clinic by:

(a) Admissions Committee of the Topeka State Hospital. These patients applied for hospitalization, but the committee which reviews all such requests felt that a preliminary evaluation by the outpatient clinic would be helpful in assessing the situation.

(b) Psychiatric resident physicians of Topeka State Hospital who felt that some patients under their charge would profit by psychotherapy.

(c) Division of Institutional Management of the state of Kansas.

(d) Menninger Clinic.

In all, 67 patients were referred by psychiatric agencies; of these, 56 patients completed evaluation and 11 did not.

Fifty-five patients were referred to the clinic by medical agencies, physicians, local hospitals, and sanatoria. Of these, 43 patients completed evaluation and 12 did not.

County welfare departments referred 16 patients, 12 of whom completed evaluation. Most of these patients were referred so that we might find out whether they were eligible for financial assistance from these agencies on the basis of their psychiatric difficulties.

Six patients were referred by the court, 5 of whom completed evaluation. Some patients who were referred here by court stayed through the evaluation since they felt that by this procedure they might receive a less severe sentence. In other instances the patient put the psychiatrist in the role of a referee between him and the court. When the patient found that the psychiatrist refused to take sides, insisting that his function was to help the patient with his emotional problems, the patient left the evaluation.

Analysis of patients in terms of referrals showed that those who came at the insistence of friends or relatives followed through the evaluation procedure better than others, but the total number is too small to draw any valid conclusions. Most of these were patients with depressive reactions, and it is inferred that the relatives were more particular about cooperating with the clinic because of the possible danger of suicide.

Of 123 patients who originally contacted the clinic either by themselves or at the insistence of their friends or relatives, only 61, 50 per cent, came for pre-intake, and 53 of these, 86.9 per cent, completed the evaluation procedure. On the other hand, 149 patients made first contact with the clinic at the insistence of psychiatric and medical agencies; 122 of these, 81.9 per cent, came for pre-intake, and 99 completed the evaluation procedure. In a way, all psychiatric and medical agency referrals are self or relative referrals since the patients made a first "stop over" at these agencies before they were referred to the clinic. These patients or their relatives were sufficiently aware of the difficulty and had a measure of motivation to seek help, but it seems that going to private physicians or psychiatrists equips them better to follow through the evaluation procedure at the clinic than if they had come to the clinic directly.

One unusual self referred patient said, "I have no problems to talk about, my work seems a pleasure, and I have come here only to find out how this outpatient clinic works in case I have trouble later on."

5. Patients were studied in terms of educational background. Twenty-seven had received grade school education; 19 completed evaluation and 8 did not. One hundred sixteen had received high school education, 93 completing the evaluation and 23 not doing so. Forty-nine had received college education, 45 of whom completed evaluation and 4 of whom did not. Thirteen patients continued their studies after completing college, and of these 12 completed evaluation and 1 did not.

It is understandable that patients with more education had a greater degree of awareness of their problems and better appreciation of the nature of the help that the clinic offers. This is reflected in the number of patients following through evaluation.

6. Patients were studied in terms of occupation. When a patient held two occupations simultaneously, such as being a housewife and a secretary, she was classified in the one which the author considered to be primary, in this instance that of being a housewife. An 18-year-old man who was a student and worked part-time at a gas station was classified as a student. Thirteen of our patients were unemployed, and of these 7 completed the evaluation and 6 did not. Sixty-four were housewives, 50 of whom completed evaluation and 14 did not. Twenty-one were students, 20 of whom completed evaluation and 1 did not. Eleven were farmers, 9 of whom completed evaluation and 2 did not. Twenty-three were unskilled workers, 18 of whom completed evaluation and 5 did not. Professors, lawyers, secretaries, clerk-typists, and switchboard operators were considered as professional workers. Seventy-three patients fell into this category, and 65 of these completed evaluation and 8 did not.

Although the clinic serves an area which consists of farmers predominantly, the number of farmers who sought help at the clinic was significantly small. Some factors discussed above, such as education and distance from the clinic, could explain part of the story.

The findings in terms of education and occupation point conclusively to the fact that patients with higher education are able to complete evaluation more successfully than those with less education.

7. It was intended to find out whether changes in resident psychiatrists which occurred predominantly around July 1 and January 1 affected the patients in terms of their following through with evaluation procedures. During the latter half of the months of May and November and all during the months of June and December, urgent cases are scheduled for intake and if possible followed through evaluation as soon as possible. The remaining patients are informed that they may be seen for intake but that evaluation interviews will start after July 1 or January 1, as the case may be. Between January 1 and March 31, a total of 49 patients came for pre-intake, and 42 of these completed the evaluation procedure and 7 did not. Forty-six patients came between April 1 and June 30, and 34 completed evaluation and 12 did not. Seventy-four came between July 1 and September 30, and 59 of these completed evaluation and 15 did not. From October 1 to December 31, 36 patients came for pre-intake and 34 of these completed evaluation and 2 did not.

Changes in resident psychiatrists around July 1 and January 1 do not seem to influence significantly the number of patients following through their evaluation procedures.

8. Table II classifies patients according to the diagnosis as defined by the American Psychiatric Association.[4]

TABLE II

CLASSIFICATION OF PATIENTS IN TERMS OF DIAGNOSIS

Diagnosis	*Complete*	*Incomplete*	*Total*
1. Chronic Brain Syndrome	17	4	21
2. Mental Deficiency	3	1	4
3. Affective Reactions	3	—	3
4. Schizophrenic Reactions			
a. Paranoid	4	1	5
b. Catatonic	3	—	3
c. Acute Undifferentiated	3	1	4
d. Chronic Undifferentiated	8	2	10
e. Schizo Affective	3	1	4
5. Psycho Physiologic Reactions	1	1	2
6. Psychoneurotic Reactions			
a. Anxiety Reactions	35	2	37
b. Dissociation Reactions	1	—	1
c. Conversion Reactions	4	1	5
d. Phobic Reactions	1	1	2
e. Obsessive Compulsive Reactions	8	—	8
f. Depressive Reactions	34	11	45
7. Personality Disorders	37	8	45
8. Adjustment Reactions of Adolescence	4	2	6
Total	169	36	205

The number of patients in each category is too small to draw any valid conclusions, but certain broad observations may be made. The table shows that over 50 per cent of the patients came from the group with anxiety reactions, depressive reactions, and personality disorders. In this series patients with anxiety reactions followed through the evaluation procedure better than patients in the other two categories. It was also noted that during evaluation eight patients with depressive symptoms experienced amelioration of their symptoms; this in turn diminished motivation for seeking further psychiatric help. Of thirty-four patients listed under the "complete" column in depressive reactions, 6 were given instructions somewhat similar to those given in-patients of Topeka State Hospital under the treatment prescription of "Anti Depressive Regime."[5] This approach was found to be helpful, and it was possible to maintain these patients outside the hospital.

In the majority of cases the tentative diagnosis made at the intake conference did not differ from

that made at the diagnostic and appraisal conference.

Summary and Conclusions

The study was undertaken to learn why some patients drop out of the evaluation procedure. It concerns itself only with non-personal aspects of the problem, not taking into consideration the highly complex and challenging personal aspect, namely the interaction between the patient and the doctor. The attitude with which the patient looks upon his doctor, his fears, prejudices, and biases, and the attitude with which the doctor looks upon his patient, play an important part in determining whether or not the patient will follow through evaluation, but these aspects of the problem are not considered in this paper.

The conclusions of the study are:

1. Fifty-eight of 169 patients were given appropriate recommendations during the evaluation procedure, indicating the usefulness of the procedure.

2. The clinic facilities are utilized mostly by those within a radius of 50 miles.

3. Those referred by medical and psychiatric agencies complete the evaluation procedure better than others.

4. Patients with higher education have better chances of completing the evaluation procedure.

5. Change in resident staff in January and July does not seem to affect the dropping out of patients during their evaluation.

6. Over 50 per cent of the patients are in groups of anxiety reaction, depressive reaction, and personality disorder. Patients carrying the diagnosis of anxiety reaction follow through evaluation better than the others.

Osawatomie State Hospital
Osawatomie, Kansas

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It is meet and proper that a nation should set apart an annual day for national giving of thanks. It is a public recognition of God as the Author of all prosperity. It is the erection of a memorial to the honor of Him who has led us through another year. The annual proclamations . . . of thanksgiving are calculated to remind the people of their indebtedness to God, to stir in their minds and hearts emotions of gratitude and praise and to call out thanks and sincere worship which otherwise might not find expression.

—Rev. Dr. J. R. Miller

The increasing number of accidents on our highways has stimulated the organization of groups which are engaged in an educational program aimed at the prevention of many of our present-day accidents. In addition, the various highway departments are active in accident prevention and distribute many pamphlets and papers which contain good advice to drivers and pedestrians alike. Following are some quotations from a recent bulletin from our State Highway Commission, giving rules for accident-free driving, as quoted from Harold Smith in a recently released film, "The Smith System of No-Accident Driving."

1. Aim high in steering—Most drivers hug the left edge of their lane because they steer by watching low along the left edge of the lane. This fear of hazards on the right is the reason for lane-straddling and a chief cause of head-on collisions. To steer safely in traffic, you should ignore the fact that you sit left of center in the car. Simply look well ahead at the center of your lane. Aim high, keep your main attention well ahead, and always steer for the center of your intended driving path. Never move the wheels unless your eyes are looking where you want to go. This rule applies to turning a corner. Keep your main attention well ahead along your turning path. If visibility is poor and you cannot look well ahead, slow down!

2. Watch the big picture—Keep a general watch over a wide, deep traffic scene rather than on any one detail. View the car ahead as only part of a big picture. You will see the wide, deep scene, noting key parts of the picture such as the car coming in from the left, the flashing of brake lights on the car ahead, or a parked car with a driver at the wheel. When you have the habit of seeing the big picture, you can speed up, slow down or change lanes to keep from getting trapped.

3. Keep your eyes moving—Build a habit of forcing your eyes to move about once every two seconds, and much oftener when traffic multiplies. Even if there seems to be nothing important to watch at the moment, keep scanning the whole scene near and far ahead, to the sides and through your rear view mirror. Scanning the roadway continuously gives you a wide-screen motion picture of the scene ahead, plus a continuous check on the constantly changing picture to the rear. When you see a hazard, don't stare at it. Dispose of it by adjusting speed, changing lanes, signaling—or all three if necessary.

4. Make sure they see you—To drive safely, you must get the habit of making sure the other person sees your car and shows by his action that he intends to stay put. In case of doubt, use your horn or flash your headlights at night. Give your warning as early as possible so you can stop if necessary.

5. Leave yourself an out—Get the habit of timing your pace so you always have an out if trouble develops. Watch your stopping margin, especially at night. And try to avoid being "boxed in" on both sides in traffic so you could not veer away from sudden danger. It is a good idea to leave one car space ahead for each ten miles of your speed to avoid the danger of "bumper chasing" or "tail-gating."

Another item in the second bulletin, discussing mainly intoxication in its relation to driving, is particularly significant for physicians.

How do you meet the plea of a driver accused of driving under the influence when he claims that drugs, prescribed by his physician, have produced the symptoms similar to those of intoxication? Here's one answer.

It is the responsibility of physicians to warn patients of drug reactions which might hamper driving ability. When a plea of drug influence is made, the prosecuting attorney should ask the physician whether he informed the patient of the danger of driving before the effects of the prescribed drugs had worn off. If the doctor has given such a warning the driver would have no defense, as most states prohibit driving while under the influence of self-administered drugs. *Enforcement officials might well inform doctors on the importance of such warnings.*

PRESIDENT'S PAGE

DEAR DOCTOR:

Kansas doctors should and must have a more active and more direct voice in the operation of Kansas Physicians' Service, our Blue Shield plan.

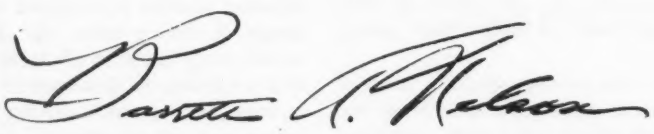
During the 12 years the plan has been in effect, there has been utterly inadequate liaison between the staff and the medical profession by whom it was conceived and continuously underwritten and sponsored. True, individual physicians such as Conrad Barnes, Henry Blake, Lloyd Reynolds, Lucien Pyle, Francis Collins and others have actively rendered great service both to Blue Shield and the profession. Twenty-three of the 29-member board of trustees are doctors of medicine. But the board meets infrequently; individual members are not as well informed as they should be; and their hurried actions are chiefly official approvals of actions of the staff and executive committee. Some board members are even bewildered as to how they were appointed and do not fully comprehend their important function as representatives of their councilor districts. Certainly there is obvious need for further and freer channels of contact between the medical profession and the Blue Shield administrative staff.

The Blue Shield Relations Committee has been formed to fill this breach. It is already activated under its able chairman, Dr. D. G. Laury of Ottawa. There is a member from each councilor district. In his district each member is chairman of the district committee, consisting of representatives from each county society. This carries the liaison directly to the constituent membership of the entire medical society.

Each county society is asked to make its appointment to the district Blue Shield, then urged to set aside a definite period of at least a few minutes at every meeting to permit its Blue Shield representative to report Blue Shield progress, Blue Shield problems, changes in fee schedules, proposed expansion, or revision of contracts, changes in policy, and other developments. Resulting discussion and expressions of opinion then furnish material for this member to carry to the Blue Shield administration through the Relations Committee. Meantime the Blue Shield staff is to keep the members of all these committees continuously and thoroughly informed so each may be fully conversant with all Blue Shield matters for transmissal to the entire profession. Of equal, possibly even greater importance, is the members' function to channel the thoughts of the profession back to Blue Shield.

It is fully expected, as a result, that Kansas Physicians' Service will more fully reflect the aims of the profession, that the practicing physician will come to realization of the tremendous service Blue Shield has provided to ward off full socialization of medicine, the great assistance it has extended to our patients to help meet the economic problems of illness, and the large part it has played in solving much of the doctor's collection problems. Not to mention the fact that the rapidly expanding medical prepayment and insurance plans are bound to approach proper and ideal form in direct proportion to the influence wielded by the non-profit, physician-sponsored, physician-controlled Blue Shield plans.

Fraternally yours,



President

EDITORIAL COMMENT

Medical Care of the Indigent

Certain facts relating to the program of medical care of the indigent in Kansas are well known to many in the medical profession. On the other hand, some physicians are not at all acquainted with the facts relating to this problem. An explanation will necessarily be long in order to cover the past experience and to project toward the future.

On many occasions the Kansas State Board of Social Welfare has requested the Kansas Medical Society to accept responsibility for medical care of the indigent on an equitable state-wide basis. "Medical care" is understood to include hospital care, drugs, and physicians' services. For obvious reasons the Kansas Medical Society refused to administer or be responsible for such a program and in turn recommended that each county be responsible for its own local service.

The Legislative Council studied this problem in 1953-1954. Representatives of the medical society and of the pharmaceutical and hospital associations were invited to meet with the Legislative Council. In 1954 the Society suggested that the figure of $6.00 be used as the amount per person per month to be budgeted for medical care of the indigent. The Legislative Council ultimately recommended an amount of $6.50. The State Board of Social Welfare said the expenditure was $5.04 per person per month in 1953. The figure $6.50 was reluctantly suggested by the Legislative Council with the stipulation that it be on a trial basis. At that time actuaries believed (and proved in a test case in a county in Minnesota) that an insurance company could not handle this type of program for less than $19 per person per month.

The Legislative Council suggested that this maximum expenditure be allowed under one of three types of programs:

1. The medical society would handle the program and distribute the money. First payments would be made to hospitals and druggists, and the remainder would then be prorated to physicians on a service basis. This is known as the insurance plan, and the maximum expenditure would be $6.50 per person per month.

2. The county welfare director would distribute the money in the same manner as above with a $6.00 maximum. (Fifty cents, we presume, is the cost of administration plus a penalty the local society would incur for refusing to enter into an insurance program.)

3. Each recipient of public assistance would receive the $6.50 and would purchase his own medical care.

After the Legislative Council's recommendation was adopted, the executive office of the medical society informed the membership that $6.50 is the maximum they can expect county welfare directors to budget for medical care.

This assumption prevailed until late in 1956, when the State Board of Social Welfare approved a contract with one county at a figure over $7.00 per person per month. Since that time other counties have been negotiating higher figures, and at least once in the last month a county has been offered an amount more than the recommended $6.50. For this reason it appears that there is no longer a maximum figure, and each county will negotiate its own contract at a figure agreeable to all concerned.

The governor of Kansas, first in a press conference, then in his address to the legislature in 1957, and again in a press conference this month, implied that physicians are receiving $6.50 per person which he believed to be adequate.

During recent years the Society has repeatedly asked the State Board of Social Welfare for a breakdown of medical care costs in each county. The answer from welfare administrators is that this is impossible. If this information could be made available, it would be much easier to make an evaluation of present programs and prove that physicians actually receive only a small percentage of the $6.50 amount. The medical society can, of course, break down the costs in some 20 counties which have insurance programs.

One must presume that the situation which prompted the action of the governor was the passage in 1956 of the amendments of the Social Security Act, authorizing a new method of federal participation in state medical aid for recipients of public assistance. The amendment authorized the federal government to subsidize each state on a matching basis in the amount of $3.00 per adult and $1.50 per child on the relief roll. The actual formula is more complicated than this, but this is essentially correct. This subject will be discussed in detail later in the editorial.

Here is a brief picture and analysis of expenditures for medical care in certain counties in Kansas in 1956. These figures were taken directly from records of the State Board of Social Welfare.

There are 14 counties in Kansas which have 1,000 or more persons on relief rolls. Indigents in these 14 counties constitute one-half the entire indigent population in Kansas. Listed below are the counties, their indigent populations, and the amounts spent per person per month in the calendar year 1956:

County	*Indigent population*	*Amount per person per month*
Allen	1,155	$6.20
Atchison	1,000	6.56
Bourbon	1,254	6.57
Butler	1,013	4.56
Cherokee	2,666	6.82
Cowley	1,244	4.86
Crawford	2,839	5.91
Labette	1,895	6.16
Leavenworth	1,159	5.85
Montgomery	2,473	6.48
Reno	1,580	3.44
Sedgwick	7,110	7.08
Shawnee	2,747	5.12
Wyandotte	4,480	5.86

One can make several deductions from the above. Sedgwick and Cherokee Counties have the highest expenditures. Cherokee exceeded the $6.50 per month by $0.32, while Sedgwick exceeded the recommended figure by $0.58 per person per month. The significant fact is that neither the State Board of Social Welfare nor the governor has shown concern over the situation in Sedgwick County, but they are determined that the Cherokee County situation needs alteration because of the high cost of care.

Here is a comparison of the two counties:

Sedgwick County spends about $600,000 per year on medical care of the indigent. Of this amount, less than 6 per cent of the total budget is paid to physicians. In other words, physicians in Sedgwick (this includes physicians employed by the county hospital) receive about 40 cents per person per month for their services and the remaining 94 per cent goes for hospitalization and drugs. The amount paid to physicians other than county hospital employees in Sedgwick County is about 2 per cent of the $7.14, or about 14 cents per person per month. Incidentally, more than 135 Sedgwick County physicians actively participate in this program. Indigents in Sedgwick County constitute more than 2 per cent of the population.

Cherokee County, on the other hand, spends about $300,000 each year on indigent care, indigents representing about 10 per cent of the county population. The method of distributing funds differs from that in Sedgwick County. In 1956 physicians received about 45 per cent of the total budget, hospitals 32 per cent, and pharmacists 23 per cent. Regardless of what constitutes equal distribution, the fact is that Cherokee County spends less per person than does Sedgwick. The governor's concern, apparently, refers to the amount or percentage paid to the physician rather than to the total amount spent. Incidentally, in Cherokee County about 20 per cent of the total spent on physicians' fees in 1956 was paid to practitioners other than medical doctors.

In counties with fewer than 1,000 persons on relief rolls, expenditures in 1956 varied from $2.97 per person per month in one county to $35.77 in another.

Without investigating the $35.77 per person, one can only guess at the reasons for this high expenditure. This happened in a county with only 17 persons on the relief roll. There is only one doctor in the county and he is not a member of the medical society, nor has he applied for membership after practicing in the county more than two years. In fairness to all concerned, however, it should be pointed out that with such a limited number of persons involved the insurance principle cannot work. Obviously one or two long-term hospitalization illnesses could show a high expenditure per person in a sparsely populated county without excessive fees on the part of the physician.

One other example of high cost care is found in a county which spent $21.57 per person. There are 77 people on relief there. The only physicians in the county are located in the northeast corner, which means that one house call could constitute a trip of 70 miles. This not only points out that the cost of medical care in one county could be substantially higher than in another but indicates why the Society feels that local situations warrant local solutions.

The over-all cost of medical care of the indigent in 1956 was $6.49, according to figures in the office of the Kansas State Board of Social Welfare. This, of course, is within the figure recommended by the Legislative Council in 1954, even after considerable increase in the cost of hospitalization and drugs.

It seems necessary to mention this fact which can be unchallenged. Regardless of where the ceiling is placed on the cost of medical care of the indigent, whether it be $6.50 per month or $7.50 per month, the physician is not going to receive anywhere near his regular fee, nor should he expect to. If, under an insurance program, the ceiling is fixed without regard to the cost of living, the physician will, at the outset of the program, receive more than he will get the next month, or certainly a year later. This is because of the rise in costs in hospitals and drugs which, under an insurance contract, are paid for before physicians prorate their charges for services. The only obvious solution, if the insurance plan is the feasible one, is to set the maximum figure with an annual or semi-annual adjustment based on fluctuations in the cost of living.

Just what the governor had in mind when he criticized the medical profession late in 1956 and twice again in 1957 is difficult to analyze. In the

first place, the cost of medical care, according to the latest figures available, fell below $6.50, the figure approved by the Legislative Council and now suggested by the governor. It is surprising for a governor to be critical of a governmental agency which lives within its budget, let alone a group of private citizens volunteering their services at a substantially (75 per cent) reduced cost.

One could not leave this subject without a look at the immediate past and certainly the future of this program. The most important consideration at present is the federal government.

Although the federal government, as of October 1, 1957, gave a substantial increase to the over-all cost of state welfare programs in accordance with a formula set forth by Congress, this discussion will deal only with the part of the 1956 Social Security amendments which authorized a new financing method for medical care of the indigent. As previously mentioned, this amounts to about $3.00 per person per month for adults and $1.50 for each child. This amount alone will make a substantial increase in the 1958 welfare budget. The exact amount cannot be ascertained from the State Board of Social Welfare, but this information is forthcoming from Washington.

If one outside the welfare office would try to arrive at the increased figure, he would have difficulty because the formula is complicated. For example, this medical program applies only to persons in four categories of assistance, but these four include more than 90 per cent of those on relief. Counties must meet certain requirements to participate in this program.

The federal government was asked if a county could participate in the matching program if a county physician handled all its welfare work. The first answer was "yes." Then it became "no." When that was challenged it was changed to "yes" again, and today the answer is "I don't know." This is just an example of why it is difficult to make a statement in regard to the amount of federal aid which will be expended in Kansas in 1958.

Nevertheless, it is a known fact that Kansas will receive a substantial amount under the new medical plan and the increased aid in over-all assistance to the state. A conservative estimate, reluctantly made at this point, would be in the neighborhood of three million dollars for the two programs.

It has been mentioned that the Kansas legislature will be asked to appropriate approximately $12 million in January, 1958 to cover an estimated deficit in all state expenditures. Is the governor attempting to take care of part of this deficit by using federal funds earmarked for medical care for other purposes?

Is the governor like the parent who tells a child he is spending too much money, even though the child is living within his allowance, or like the employer who tells his employees he is looking for ways to decrease expenditures even though it can't be done? Naturally the psychological factor is in favor of the parent or employer in that it is an instrument used to keep the allowance or expenditures within the framework of the budget whether practical or not.

Members of the medical society should be aware of the following:

1. The Legislative Council in 1954 did recommend a $6.50 per person maximum expenditure on a trial basis.

2. Since 1954, in a typical county using the insurance plan, the cost of hospitalization has risen about 10 per cent, the cost of drugs about 3 per cent.

3. This increased cost decreases the amount received by physicians since hospital and drug charges are paid before physician fees.

4. The federal government, regardless of what one may think, has in the 1956 Social Security amendments earmarked a substantial increase to the states for medical care.

5. The growing tendency on the part of politicians is to exploit the doctor unfairly, charging or implying that the physician now receives the $6.50 when in fact he receives less than one-fourth of this amount.

6. If the governor is successful in holding the line to a $6.50 maximum, the earmarked medical care money from the federal government will be forthcoming and will be used to help pay the state deficit or for additional state-supported programs.

Does the Kansas Medical Society wish to take immediate action upon one of the following:

1. Recommend that the maximum figure remain at $6.50.

2. Recommend that the figure remain at $6.50 plus increased costs of operating such programs since 1954.

3. Serve notice that physicians will cooperate in a program only if a specified amount or percentage of the total is budgeted for physicians. In that way, in the future, no one will think of the doctor's income in terms of over-all medical care which includes hospitals and drugs.

4. Present a fee schedule upon which all physicians in Kansas can agree.

In the interest of public relations, the Society must be firm in its stand on this issue. Regardless of the course, the future program must be clear so that no public figure can criticize a profession which contributes a great amount of time in the interest of public service. Certainly the public is entitled to a

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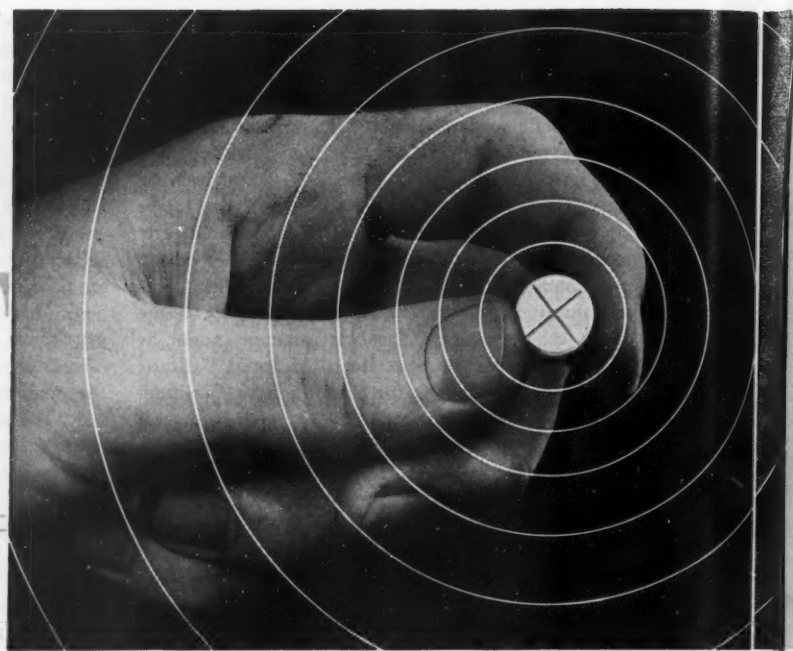

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The recommended adult dose is 1 Gm. (2 tablets or 4 teaspoonfuls of syrup) the first day, followed by 0.5 Gm. (1 tablet or 2 teaspoonfuls of syrup) every day thereafter, or 1 Gm. every other day for mild to moderate infections. In severe infections where prompt, high blood levels are indicated, the initial dose should be 2 Gm. followed by 0.5 Gm. every 24 hours. Dosage in children, according to weight; i.e., a 40 lb. child should receive ¼ of the adult dosage. It is recommended that these dosages not be exceeded.

Tablets:
Each tablet contains 0.5 Gm. (7½ grains) of sulfamethoxypyridazine. Bottles of 24 and 100 tablets.

Syrup:
Each teaspoonful (5 cc.) of caramel-flavored syrup contains 250 mg. of sulfamethoxypyridazine. Bottle of 4 fl. oz.

[1] Nichols, R. L. and Finland, M.: J. Clin. Med. 49:410, 1957.

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breakdown of medical care costs for which they pay. The medical society at this time or in the future is happy to make known the percentage or amount of the total medical care budget which is used for physicians' services.

Public Relations A Plus

The Medical Society of Sedgwick County has once again proved that a lot of effort with little expense can improve immeasurably the attitude of the people toward the profession.

Business Education Day was observed in Wichita on October 24. This is a day set aside for teachers to visit various businesses and organizations in the locality for the purpose of achieving a better understanding and knowledge of their city.

Seventy-five of the 2,500 Wichita teachers were guests of the medical society. During the morning they were introduced to their hostesses, members of the Woman's Auxiliary. Five teachers were assigned to each hostess. The remainder of the morning was spent in touring the offices of doctors practicing various specialties. At each stop on the tour, a physician explained his office routine and gave a brief description of various types of medical care. This part of the day gave the teachers a realistic picture of medical problems and was mentioned enthusiastically by all who participated.

Following a luncheon at the society office building, the teachers heard a résumé of the purposes and activities of the medical society, presented by the executive secretary in Sedgwick County, Mr. H. Martin Baker. Officers and committee chairmen currently serving the society were also present.

After a tour of the society building, the 75 teachers divided into three groups, each going to a different hospital for indoctrination there. At each hospital a pathologist conducted a tour and gave explanations of various hospital customs, resources, and facilities. The day ended with a trip through the new county hospital for indigent patients.

An educational program of this type can be a project of any county society in the state and would pay dividends in better understanding on the part of all who are thus indoctrinated.

Eight Americans died from rabies in 1956, according to a study reported recently by the American Medical Association. One additional death was attributed to rabies but was not confirmed by autopsy. Five of the confirmed deaths occurred in Texas and one each in Alabama, Indiana, and New Mexico. In recent years the lowest death rate was 4 in 1955; the highest was 24 in 1952.

DEATH NOTICES

James Harvey McNaughton, M.D.

Dr. J. H. McNaughton, 77, who practiced in Topeka for many years before his retirement, died at a Topeka hospital on September 25. He was graduated from Kansas Medical College in 1902 and began practice immediately. After many years as an active member of the Shawnee County Medical Society, he became an honorary member of that group and held that status at the time of his death.

Benjamin Brunner, Jr., M.D.

Death came unexpectedly to Dr. Benjamin Brunner, Jr., 45-year-old Wamego physician, the apparent victim of a heart attack, on September 29. A graduate of the University of Kansas School of Medicine in 1936, Dr. Brunner began practice in Wamego with his father, the late Dr. Benjamin Brunner, Sr. He was an active member of the Pottawatomie County Medical Society.

Enoch Schumann, M.D.

Injuries received in an automobile accident on September 20 proved fatal on September 27 to Dr. Enoch Schumann of Blue Rapids, who died at a Concordia hospital. The 76-year-old physician had completed 50 years in practice earlier this year. A graduate of Ensworth Medical College, St. Joseph, in 1907, Dr. Schumann did postgraduate work for two years at Rush Medical College, Chicago. His first Kansas work was in Cleburne, from where he moved to Blue Rapids in 1919.

Lyman C. Murphy, M.D.

A Wichita pathologist, Dr. L. C. Murphy, 75, died at his home on October 4. He was graduated from St. Louis University School of Medicine in 1921 and came to Kansas from Chicago in 1937. He had served as pathologist for Sedgwick County Hospital and for several outlying hospitals until his semi-retirement in 1944. He was a diplomate of the American Board of Pathology.

THE MONTH IN WASHINGTON

Several months in advance of the return of the 85th Congress for its election-year second session, influential figures in the field of health in both the executive branch and in Congress were being heard on what 1958 has in store for the medical profession.

Because of the roles they play in the Capital, their views are worth more than passing notice. One is the chairman of the important health appropriations subcommittee of the House, Rep. John Fogarty (D., R.I.). He used as a forum for his prophecies the annual convention of the American Hospital Association.

Other prognostications came from Dr. Aims C. McGuinness, special assistant for health and medical affairs to Secretary Folsom of the Department of Health, Education, and Welfare. Dr. McGuinness spoke out at a dedication ceremony of a new chronic disease and rehabilitation facility in Maine.

Mr. Fogarty places at the top of his predictions some action on federal construction aid to medical schools. The Rhode Island Democrat has his own bill on the subject, although there are others pending. Comments Mr. Fogarty: ". . . the shortage of health education facilities today is probably the most serious bottleneck in our whole medical system. . . . These schools . . . fall far short of accommodating the fully qualified and competent young men and women in America who are anxious to train and qualify in medical, dental and public health fields."

The record of the past several years has shown that no member of the House is listened to more carefully when it comes to health than Mr. Fogarty. His philosophy in the health field is worth noting: "It is now generally accepted that the health of our people is a major national resource and that the government, therefore, has a direct responsibility for the health of everyone."

Dr. McGuinness also spoke out strongly for federal aid to medical schools. Failure to meet the needs of the schools, he told his audience, would be "the worst kind of economy." He feels that the administration proposal for $225 million in construction grants would bring classrooms and research laboratories "much closer to current and projected needs."

While neither man had any specific legislative proposals to make in the field, both foresee a growing role for hospitals in the practice of medicine. Dr. McGuinness put it this way: "General hospitals must broaden their services and achieve greater coordination. The term 'hospital care' should include not only bed care but diagnostic service as well as service to ambulatory patients."

Mr. Fogarty, looking ahead 25 years, said it was safe to predict that virtually every general hospital in the nation will be providing at least as much preventive service as curative service. "You are, in fact, moving closer each moment to the day when hospitals will be the focal point of health services for all of us, throughout our entire lives."

The same day that Mr. Fogarty was urging the hospitals to use the basic Hill-Burton hospital construction program to meet future health needs, the AHA House of Delegates approved a set of legislative proposals to present to the next session.

They would accomplish the following: (1) extend the act for five years beyond June, 1959, (2) authorize matching Hill-Burton funds for renovation and repairs of hospital plants, (3) set up loan authority so that hospitals not desiring grant money could borrow construction and renovation funds at very low interest rates (from 1½ to 2 per cent). The house also urged a grants program to hospitals with nursing schools and to other nurse institutions for professional education, exclusive of construction grants.

Notes

One committee of Congress knows months in advance just exactly what it plans to do the day Congress reconvenes. The tax-writing House Ways and Means Committee has set hearings starting January 7 on possible tax reductions next year.

Included on the agenda will be testimony from various organizations on the Jenkins-Keogh bills for allowing tax deferments for money paid into retirement plans. The American Thrift Assembly, which is backed by the American Medical Association and other professional and business groups, plans to be heard at some time during the 30 days of hearings.

Veterans Administrator Harvey Higley believes that the public is losing interest in the veteran and his problems, and that some doctors no longer hesitate to attack medical care for veterans, particularly those with non-service-connected disabilities. Mr. Higley spoke at the annual American Legion convention.

Health directors of 21 American republics, holding their annual Pan-American Sanitary Organization meeting here this fall, voted a $3 million budget for the Pan-American Sanitary Bureau's 160-odd health projects for next year.

Clinicopathological Conference

Diabetes Mellitus, Hyperlipemia and Recurrent Acute Pancreatitis

Case Presentation

We are discussing today a 27-year-old, white housewife who was admitted to this hospital for the first time on April 18, 1953, complaining of diabetes and a skin rash of six months duration. She was admitted for the second time on September 14, 1956, and died the following day.

In 1951 she first became aware of several small, hard, reddish papules with yellow centers which appeared on the extensor surfaces of her forearms, hands, and legs. She consulted her physician who prescribed a brown liquid. After she took this medication for one month, the papules disappeared and did not reappear until six months before her admission. At that time she noticed similar lesions on her hands; these spread to involve the arms, legs, and back. The nodules were not painful, and there was no associated pruritus, but pressure on them produced a sharp stabbing pain. The patient came to the outpatient clinic at this hospital for evaluation of the skin rash.

She stated that she had been overweight all of her life, her maximum weight being 245 pounds in March, 1953. Since that time, although she had noted an increase in appetite associated with a craving for sweets and pastries, she had lost 31 pounds. During March, 1953, she suffered from increasing fatigue, and during the three weeks before admission she experienced unusual thirst, frequency of urination, and nocturia. Since August, 1953 she had had intermittent perineal pruritus and dysuria, usually preceding the menses. There had been no disturbances of vision, no paresthesias, no numbness or disturbances of gait. She had had no chills, sweats, or fever. Her gums bled easily, and infections were slow to heal. She had had one or two colds a winter, but no sore throat or hoarseness, and there was no dyspnea, cough, hemoptysis, chest pain, palpitation, or other cardiorespiratory symptoms. Minimal ankle edema had occurred on prolonged standing.

She had no unusual food intolerances, nausea or vomiting, and no abdominal pain; bowel movements had been normal. Her menarche was at 13 years of age, and she had 28- to 31-day cycles with a four- to five-day menstrual flow. There had been one episode of intermenstrual spotting in March, 1953. She complained of a watery, white, vaginal discharge of approximately six weeks duration. She had never been pregnant. On April 1, 1953, she had low lumbar back pain radiating down the right posterior thigh to the toes. The pain was not incapacitating and was relieved by lying flat on her back.

She had had the usual childhood diseases without sequelae. In 1949 she had had pneumonia which was treated with penicillin. There had been no other serious illnesses, accidents, or operations. She had never had scarlet fever, rheumatic fever, tuberculosis, asthma, or renal diseases. She did not use tobacco or alcohol.

The patient's mother was 41 years of age, living and well; her father died of pneumonia in 1941. There were four sisters, living and well. There was no family history of diabetes, hypertension, kidney disease, cancer, allergy, tuberculosis, or arthritis.

On physical examination the patient was found to be an obese, young, white woman in no apparent distress. Her blood pressure was 135/100; pulse, 108; respiration, 24. There were numerous elevated, irregular, reddish papules with firm, yellow centers involving the skin of the extensor surfaces of the forearms, posterior aspects of the thighs, and the back. One papule was seen on the hard palate. Her thyroid was not enlarged, and no cervical adenopathy was present. The chest was clear to auscultation and percussion; the heart was not enlarged, and there were no thrills or murmurs. The extremities were not unusual; there was no edema; peripheral pulses were palpable and equal. The deep tendon reflexes were normal, and no pathological reflexes were present.

The urine had a specific gravity of 1.027; albumin, 3 plus; sugar, 2.2 per cent; rare granular casts; many bacteria; and 8 to 10 pus cells per high power field with an occasional red cell and some pus clumps. The red count was 5,280,000 with 15.2 gm. hemoglobin, and the white count was 10,600 with 60 per cent polymorphonuclears; 31 per cent lymphocytes; 2 per cent eosinophiles; and 7 per cent monocytes. The platelet count was 250,000 per cu. mm. The VDRL was non-reactive. Serum calcium

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Edited by Jesse D. Rising, M.D., and Mahlon Delp, M.D., from recordings of the conference participated in by the departments of medicine, pediatrics, surgery, radiology, and pathology of the University of Kansas Medical Center as well as by the third and fourth year classes of medical students.

was 5.5 mEq/L; sodium, 118 mEq; potassium, 4 mEq; carbon dioxide, 19.5 mEq; chlorides, 87 mEq; phosphorous, 1.9 mEq; non-protein nitrogen, 39 mg. per cent; creatinine, 1.5 mg. per cent; blood sugar, 260 mg. per cent; and cholesterol, 1675 mg. per cent with 65 per cent esters. The serum albumin was 3.06 gm. per cent; globulin, 4.24 gm. per cent. The prothrombin time was 100 per cent of normal. The thymol turbidity was 30 units. The two-hour urobilinogen excretion was 1.35 mg. Phenolsulphonthalein excretion was 69.5 per cent; urea clearance, 85 ml. per minute. A Coombs' test was negative.

All skin tests were negative. The I^{131} uptake by the thyroid was 17 per cent in 24 hours; basal metabolic rate, plus 25. There was persistent albuminuria, and quantitative albumin excretion ranged from 110 to 210 mg. per day. The specific gravity of the urine ranged between 1.002 and 1.016.

After she was placed on adequate insulin therapy the glycosuria disappeared, but there was persistent pyuria with an occasional cast and red cells. Serum electrolytes were restudied, and on April 23, 1953, the sodium was 127 mEq/L; potassium, 4.5 mEq; chlorides, 89 mEq. On May 4 the sodium was 131 mEq; potassium, 4.4 mEq; and chlorides, 100 mEq. There was a gradual decrease in cholesterol values to 496 mg. per cent at the time of discharge. The urine culture revealed a few colonies of non-hemolytic Micrococcus aureus and enterococci. The sedimentation rate was 25 mm. in one hour.

The patient's temperature was 99.6 degrees on April 18, but during the remainder of her hospitalization she was afebrile. She weighed 211 pounds on admission. From April 18 to April 20 she received no insulin and had persistent glycosuria. On April 22 she was started on 15 units of isophane (NPH) insulin, and during succeeding days this was gradually increased to 35 units a day at the time of discharge. The glycosuria disappeared except for an occasional trace on April 23, at which time she was taking 15 units of isophane insulin. The blood sugars gradually decreased during the last few days and ranged between 195 to 110 mg. per cent.

She felt well throughout her hospitalization. She was instructed in the use of insulin and placed on a diet of 130 gm. carbohydrate, 80 gm. protein and 60 gm. fat. On this regimen the skin lesions gradually disappeared, and she was discharged on the diabetic diet and 30 units of isophane insulin.

She was admitted for the second time on September 14, 1956, complaining of epigastric pain, nausea, and vomiting. She had had a sudden onset of acute abdominal pain with nausea and vomiting about 36 hours before coming to the hospital and had taken little by mouth during this period. The vomitus was bile stained. She said that she had had a similar episode in September, 1955, but that it had responded to conservative measures. She had taken her insulin the day before and the day of admission.

She was an extremely obese, acutely ill woman complaining bitterly of epigastric pain. The blood pressure was 120/80; pulse, 120 and regular; temperature, 100.6 degrees. The pupils were round and equal and reacted to light and accommodation. The funduscopic examination was unsatisfactory. The tongue and mucous membranes were dry and coated. No acetone breath was noted. The chest was clear to auscultation and percussion; there were no heart murmurs. The liver was felt 9 cm. below the costal margin; the edge was sharp and exquisitely tender. There was diffuse, rebound tenderness in the epigastrium. No bowel sounds could be heard. There was questionable cyanosis of the fingers. The deep tendon reflexes were physiologic; the cranial nerves were intact; no pathological reflexes were noted.

She was admitted on the surgical service on the advice of her personal physician. Five hundred ml. of Dextran was given intravenously, followed by 1000 ml. of dextrose (5 per cent) in saline. She was then transferred to the medical service. For six hours after admission she complained of excessive thirst and severe abdominal pain, and she continued to be nauseated, vomiting "coffee-ground" material intermittently. At 7:30 p.m. she became extremely disoriented, combative and confused, and she was given 200 ml. of dextrose (5 per cent) in saline with 25 units of regular insulin. This was followed with 1000 ml. of 1/6 molar sodium lactate with 500 mg. of tetracycline added. At 8:30 p.m. she was given 50 units of regular insulin subcutaneously because the urine sugar had been 4 plus with 3 to 4 plus urine acetone. At 10:00 p.m. the urine sugar was still 4 plus, and she was given another 50 units of insulin.

At 9:30 p.m. she became hypotensive and was given a second 500 ml. of Dextran rapidly. The foot of the bed was elevated, which temporarily returned the blood pressure to normal. During the next five hours she was intermittently hypotensive but responded to elevation of the foot of the bed. At 10:30 p.m. a gastric tube was passed with much difficulty and "coffee-ground" material was aspirated. She pulled the tube out, and although it was replaced twice, she pulled it out each time. She was given 50 units of insulin at 11:15 p.m. and 40 units at 12:30 a.m. (September 15, 1956). At 11:30 p.m., 120 mg. of amobarbital sodium was given intramuscularly in an attempt to reduce her agitation.

At 2:00 a.m. she rested quietly, did not complain of abdominal pain, apparently felt better, and was more alert than she had been at any time since the original examination.

At 2:15 a.m. she suddenly stopped breathing, became cyanotic, and died. There were no convulsive movements, and the heart was heard for approximately 50 to 60 seconds following cessation of respirations.

Dr. Mahlon Delp (moderator): Are there any questions for Dr. Manning?

Howard E. Gard (fourth year medical student)*: Did she have epigastric pain before her admission?

Dr. Robert Manning (resident in medicine): There was no history of any pain.

Wayne Frazier (fourth year medical student): When was the diagnosis of diabetes first made?

Dr. Manning: About six months before she was seen here.

Mr. Frazier: What was the serum amylase?

Dr. Manning: On the last admission the serum amylase was between 100 and 150 mg. per cent.

Ralph R. Hall (fourth year medical student): What was the cholesterol level on the first admission, and how rapidly did it decrease?

Dr. Manning: On April 22, 1957, it was 1675 mg. per cent; on April 24, 1220 mg. per cent; on April 29, 780 mg. per cent; on May 1, 627 mg. per cent; and at discharge, 496 mg. per cent.

Mr. Gard: Were any flapping tremors noted?

Dr. Manning: There were tremors at one time.

Dean Gettler (fourth year medical student): Did she take insulin between the periods of hospitalization?

Dr. Manning: Her husband said that she did.

Mr. Gard: What was the last blood sugar in the terminal episode?

Dr. Manning: 270 mg. per cent.

Carlyle M. Dunshee (fourth year medical student): What was the blood pressure in the final episode?

Dr. Manning: Her blood pressure, except for a brief period of hypotension, fluctuated from 110 to 120 systolic and 70 to 80 diastolic.

Mr. Gettler: What was her urinary output?

Dr. Manning: It was usually 50 to 100 ml. per hour.

Mr. Frazier: Was her spleen ever enlarged?

Dr. Manning: No.

Dr. John F. Christianson (internist): Was anyone in the room when she suddenly stopped breathing?

Dr. Manning: Dr. Daugherty was there. She had stopped breathing and was cyanotic. She gasped once or twice.

Robert F. Goodwin (fourth year medical student): What was her temperature on admission?

Dr. Delp: It was 100.6 degrees.

Mr. Frazier: Did the papules on her arm become pustular?

Dr. Manning: I do not know.

Dr. Delp: I do not believe they were pustular; they were chamois-colored papules.

Mr. Hall: Was a serum calcium determination made during the terminal episode?

Dr. Manning: An attempt was made, but we had insufficient serum.

Dr. Delp: May we have the electrocardiogram, please?

Mr. Hall: This tracing, made on the first admission (Figure 1) shows a regular sinus rhythm. The rate is 120. There is inversion of the T-wave in lead III and flattening of the T-wave in the last three chest leads. The Q-T interval is approximately 0.3, which is within the upper limits of normal for this heart rate. I think this electrocardiogram is compatible with myocardial ischemia.

Dr. Delp: Dr. Lin, do you have any comments?

Dr. T. K. Lin (cardiologist): The T-wave is difficult to interpret.

Dr. Delp: May we have the x-rays, please?

Mr. Gettler: The first x-ray is a P-A and lateral of the skull in which I see deviation of the nasal septum, but no other bony abnormality. In the lateral I see no bony abnormalities, and the appearance of the skull is normal. In the P-A and lateral film of the chest there are no bony abnormalities; the costophrenic angles are clear. The hilar markings are normal, and the lung fields are clear. The heart is not enlarged.

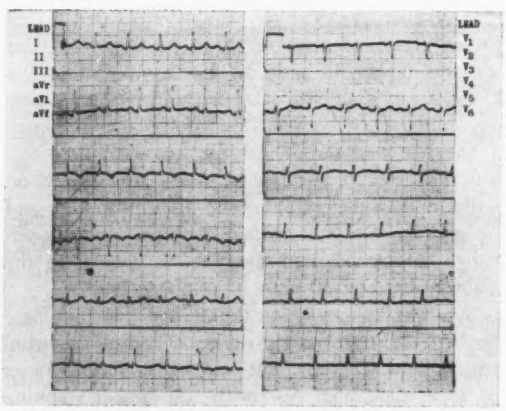

Figure 1. Electrocardiogram, first admission.

* Though a medical student in May, 1957 when this conference occurred, he, like the others referred to as students, received the M.D. degree in June, 1957.

Dr. Delp: Dr. Tice, do you have any comments?

Dr. Galen Tice (radiologist): I have nothing to add.

Dr. Delp: This is an interesting case with some facets that are highlighted distinctly. Mr. Frazier, may we have your discussion, please?

Differential Diagnosis

Mr. Frazier: The case for discussion today concerns an obese, 27-year-old white woman who first entered this hospital on April 18, 1953, with a chief complaint of a skin rash for six months and diabetes. She had first noted multiple small, hard, reddish papules with yellow centers on the extensor surfaces of her forearms, hands, and legs. These papules disappeared after she took a brown medicine for one month. The lesions recurred about six months before the first admission, and she came to the outpatient clinic to have them evaluated. She had always been obese, but she had lost more than 30 pounds in the two months before admission. Other symptoms included increased appetite, fatigability, thirst, urinary frequency, and nocturia. She had a history of perineal prūritus, burning on urination, and slow healing of infections.

The physical examination at the time of the first admission revealed an obese female in no acute distress. The skin lesions were present on the extensor surface of the forearms, the posterior aspects of the thighs, the back, and the hard palate. Positive urinary findings included albuminuria, glycosuria, bacteriuria, pyuria, and granular casts. Other findings were: blood sugar, 260 mg. per cent; sodium, 118 mEq/L; carbon dioxide, 19.5 mEq; thymol turbidity, 30 units; reversed albumin:globulin ratio, and a serum globulin of 4.24 gm. per cent.

During the hospital course she continued to have pyuria with occasional casts, red blood cells, and albuminuria. Sodium and chloride determinations showed a return toward normal values on repeat studies. The cholesterol value gradually decreased to 496 mg. per cent at the time of discharge.

On the fourth hospital day she was started on insulin which was gradually increased to 35 units of isophane insulin daily. The glycosuria disappeared; the blood sugar decreased; the skin lesions began to disappear. She was discharged on May 6, 1953, on a diabetic diet and 30 units isophane insulin daily.

She reentered this hospital for the second time more than three years later. She had been experiencing acute epigastric pain with nausea and vomiting for 36 hours. A similar episode had occurred a year previously. Physical examination revealed an acutely ill obese woman with a pulse rate of 120 and a temperature of 100.6 degrees. Her tongue and mucous membranes were dry and coated. The liver was enlarged and quite tender. There was rebound tenderness, and bowel sounds were absent.

Laboratory findings include pyuria, glycosuria, albuminuria, casts, and acetonuria. The red count was 5,959,000 with 17.5 gm. of hemoglobin. The blood sugar was 696 mg. per cent; sodium, 114 mEq/L; carbon dioxide, 14.4 mEq; chlorides, 66 mEq; BUN, 28.5 mg. per cent. Repeat electrolytes showed sodium, 130 mEq; chlorides, 90 mEq; potassium, 4.5 mEq.

During the first hours after her admission she had excessive thirst, severe abdominal pain, nausea and vomiting of coffee-ground material. Therapy included intravenous Dextran, 5 per cent glucose in saline, 1/6 molar sodium lactate, tetracycline, and regular insulin.

On the evening of admission she had intermittent hypotension which responded to elevation of the foot of her bed. She was disoriented and confused, and was given amobarbital sodium to relieve the agitation. The blood sugar had decreased to 170 mg. per cent by 12 o'clock. By 2:00 a.m. she was quiet, and apparently felt better. At 2:15 a.m. she suddenly ceased breathing, although heart tones persisted for about one minute.

The findings in this case present the classical picture of diabetes mellitus. The question is whether diabetes, per se, can explain the various unusual facets of this case. The description of the skin lesions points to typical xanthomata, and I shall base my differential diagnosis on those diseases which are characterized by xanthomata.

The first group of such diseases I would like to mention is that called the hypercholesterolemic xanthomatoses, including (1) familial hyperlipemic xanthomatosis; (2) those secondary to liver diseases such as biliary cirrhosis, hemochromatosis, and postoperative obstruction of the bile duct; and (3) hypercholesterolemia in hypothyroidism. These diseases can be ruled out because, in them, the serum is never chylous in appearance, as it was seen in this case.

Another group of such diseases, classified as normocholesterolemic xanthomatoses, includes eosinophilic granuloma and Hand-Schüller-Christian disease. I rule these out because, in them, the serum is characteristically clear, and the cholesterol is normal. This patient had high cholesterol levels and milky serum.

The third group is the hyperlipemias which are associated with secondary eruptive xanthomata. Idiopathic hyperlipemia may be classified as infantile or adult. The latter is characterized by skin eruptions, milky serum, retinitis, hyperlipemia (correctable by diet) and glycosuria (corrected by diet). Hepatosple-

nomegaly and abdominal pain may be present. Although this disease explains many of the findings in our patient, I rule it out because insulin was ineffective in reducing the hyperlipemia. In our patient the lesions preceded the diabetes.

Hyperlipemia with xanthomata can occur in glycogen storage disease, but I rule this out because it occurs mainly in children. I also rule out lipoid nephrosis as a cause of hyperlipemia because there is no evidence of anasarca in our patient.

Hyperlipemia can occur in chronic pancreatitis and give rise to skin lesions such as our patient had. Pancreatitis commonly causes abdominal pain, glycosuria, and hepatosplenomegaly. This could explain the patient's diabetes and many of the other findings. It is a diagnosis difficult to rule out. I do so, however, because there was no history of the usual repeated attacks of abdominal pain, because of failure of the hyperlipemia to respond to insulin, and because of lack of positive laboratory findings.

Hyperlipemia with secondary xanthomata is seen in severe untreated diabetes, the well known xanthoma diabeticorum. There are the usual findings of diabetes, abdominal pain, and liver enlargement. The hyperlipemia is reduced by insulin.

I believe that the findings in our patient can be explained upon the single disease of diabetes mellitus. An underlying pyelonephritis may have caused the difficulty in controlling the diabetes. The patient had diabetic acidoses which apparently responded satisfactorily to treatment.

The sudden death is difficult to explain. The usual cause of sudden death in diabetes is coronary artery or renal disease, but that seems unlikely here. One must consider a cerebral vascular accident with the secondary polycythemia atherosclerosis and hypotension as antecedent factors. With no real basis to explain the phenomena, however, the terminal episode is only a speculation. The patient's death may actually have been unrelated to the underlying disease.

Clinical Discussion

Dr. Delp: Mr. Hall, how do you account for the low serum electrolyte values?

Mr. Hall: The explanation which seems most satisfactory is that offered by Albrink.[1] In studying a diabetic patient having very high blood lipid levels, xanthoma diabeticorum, and lactescent serum, she found serum electrolyte values even lower than these. Removal of the insoluble lipids by ultra centrifugation from the serum left the electrolyte levels quite normal.

On this patient's final admission many explanations may have been offered for the low electrolyte concentrations, but this was not so for the first admission, at which time this unusual finding apparently aroused no curiosity.

Dr. Delp: What were your ideas about this patient when you first saw her, Dr. Weber?

Dr. Robert Weber (internist): This patient was referred here with a diagnosis of acute cholecystitis. She was admitted to the surgical service, because it was thought that she had an acute abdomen. When the initial laboratory results were obtained she was transferred to the medical service. Although the high blood sugar and low carbon dioxide values suggested diabetic acidosis, it was not believed that this explained the entire picture.

It is most unusual for an obese diabetic to have uncomplicated diabetic acidosis. These patients almost never develop acidosis unless some primary disease such as an infection or a vascular accident precipitates it. I believed that this patient had peritonitis because of absent bowel sounds and an acutely tender abdomen. My first impression was that she had a perforated gallbladder or duodenal ulcer, and acute pancreatitis was strongly considered. The hypotension which she developed was probably the most important clue. She improved temporarily following intravenous fluids, insulin, and gastric suction, but surgical intervention was not considered advisable because of her hypotension and extreme obesity.

Dr. Delp: You saw this patient soon after her final admission, Dr. Manning. What did you think caused her pain?

Dr. Manning: The appearance of acidosis in an obese diabetic makes mandatory a search for a severe precipitating factor. When I first saw this patient, I thought that the pain was probably due to acute fatty infiltration of the liver, and that the acidosis had been precipitated by acute cholecystitis. The subsequent course made this seem unlikely, and I then favored the diagnosis of acute pancreatitis.

Dr. Delp: Dr. Allbritten, may we have your comments?

Dr. Frank Allbritten (surgeon): The differential diagnosis, considering the overwhelming pain which the patient had, lies between the perforation of a viscus resulting in a generalized peritonitis and acute pancreatitis. Initially, acute pancreatitis gives retroperitoneal inflammation. With the extension of the disease, generalized peritonitis may occur. Following perforation of a lesion of the gastrointestinal tract there are the signs of peritonitis immediately.

The signs of generalized peritonitis occurred late in the course of the disease of this patient and could easily have been secondary to acute pancreatitis. Interestingly enough, the electrolyte changes suggest that she had lost considerable fluid from the circulating blood volume, either into the peritoneal

space or retroperitoneally. They also suggest that there had been extensive tissue destruction. The decrease in calcium suggests a selective loss. The subsequent rapid deterioration would indicate that there had been massive tissue necrosis. She had overwhelming toxemia when admitted to the hospital. This was progressive until the time of her death. The objective evidence in this patient indicated a lesion causing extensive aseptic tissue destruction, and this, in all probability, was acute hemorrhagic pancreatitis.

Dr. Delp: Dr. Lambert will now enlighten us concerning our patient's disease or diseases.

Pathological Report

Dr. Marian Lambert (pathologist): At autopsy the patient was found to have a generalized peritonitis with about 500 ml. of serosanguineous fluid in the peritoneal cavity. This proved to be sterile on culture. The source of the inflammation was the pancreas, which exhibited the characteristic appearance of diffuse hemorrhagic necrosis. The gland was edematous and studded with friable gray, black, and brownish lesions. Firm, grayish-white areas of fat necrosis were present in the adipose tissue of the pancreas, mesentery, and omentum. The liver and spleen were remarkable in that both were enlarged and unusual in color. The liver weighed 5,000 grams (normal about 1,800 grams). It was greasy and yellow in color, but there was no evidence of nodularity or an increase in fibrous tissue content. The biliary ducts were patent, and the gallbladder was normal in appearance. The spleen weighed 900 grams (normal about 200 grams). It was dark brown in color and slightly firm in consistency.

Sections of the pancreas revealed extensive destruction due to necrosis and hemorrhage. Only a few small isolated areas of glandular tissue remained intact (Figure 2). It was apparent, however, that the fulminant acute pancreatitis was superimposed upon a chronic pancreatitis because there were focal areas of fibrosis, giant cell reaction, and calcification (Figure 3). The patient's history of an acute episode of epigastric pain, nausea, and vomiting one year before death suggested that there was some degree of pancreatitis at that time. This chronic lesion was consistent with one of that duration.

The pathogenesis of pancreatitis was not clear, but it seemed that the important initial lesion was ob-

Figure 2. Acute hemorrhagic pancreatitis. Section of pancreas showing extensive destruction of the parenchyma from necrosis and hemorrhage.

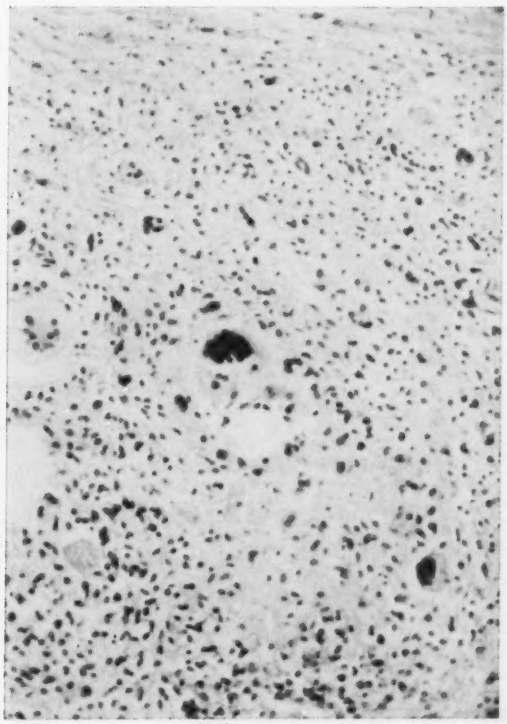

Figure 3. Chronic pancreatitis. Focal area of fibrosis with giant cell formation.

struction of the pancreatic duct. This may have resulted from numerous causes such as biliary disease, spasm of the ampulla of Vater, gallstones, pancreatic calculi, fibrosis, edema, or tumor. A significant fact, however, is that ductal obstruction per se does not usually produce the symptoms or the clinical picture of pancreatitis. This suggests that there must have been some additional factor. Although there are numerous theories based on a variety of experimental procedures,[2, 3, 4] it seems to be the majority opinion that hypersecretion of the pancreas in the presence of ductal obstruction leads to rupture of the ducts and digestion of the parenchyma by pancreatic enzymes. Fibrinoid necrosis of the walls of the adjacent blood vessels accounts for the local hemorrhage and may result in thrombosis of these vessels, as it did in our patient. The pancreatic enzyme, lipase, hydrolyzes fatty acid esters to produce the fat necrosis with deposition of calcium soap. This chemical reaction may be responsible for fixing enough calcium to produce hypocalcemia.

Obstruction of the main pancreatic duct by calculus was found in this patient (Figure 4). Hypersecretion of the pancreas due to dietary indiscretion could be postulated on the basis of her obesity. The splenic and portal veins contained occluding thrombi which produced the massive congestion of the spleen and a partial or so-called "Zahn" infarct of the liver.

The diagnosis of diabetes mellitus was confirmed histologically by the finding of hyalinization of the islets of Langerhans (Figure 5). Undoubtedly, the extreme obesity was also a contributing factor in the development of this disease. Several of the complications of diabetes such as generalized arteriosclerosis, intercapillary glomerulosclerosis, and fatty metamorphosis of the liver were also present. The skin lesions, xanthomata diabeticorum, were found to consist of masses of cholesterol. These are characteristically firm, yellow, non-tender nodules which tend to appear on the extensor surfaces which are subject to injury and on the palms and soles. They are common in all types of hyperlipemia.

We feel that the sudden death was the result of fat embolization because fat emboli were found in the lung, brain, and kidney. This is not an uncommon cause of death in patients with Laennec's cirrhosis or extreme fatty metamorphosis of the liver.

In summary, this 27-year-old, obese woman de-

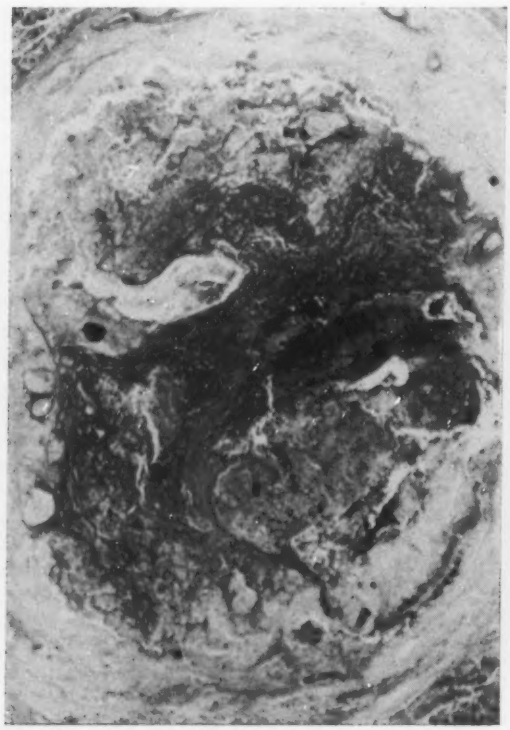

Figure 4. Calculus filling the lumen of the main pancreatic duct. The wall of the duct forms the periphery of the photograph.

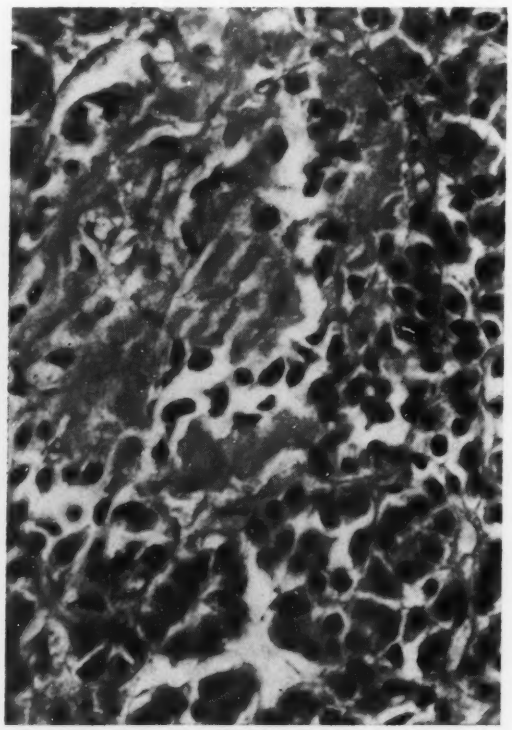

Figure 5. Hyalinization of an islet of Langerhans. The acini surrounding the islet are normal in appearance. The insulin-producing beta cells of the islet, however, have been replaced by an eosinophilic, amorphous material characteristic of hyalin.

veloped diabetes mellitus three years before death. This led to intercapillary glomerulosclerosis (Kimmelstiel-Wilson syndrome) and extreme fatty metamorphosis of the liver. About one year before death she developed chronic pancreatitis which was followed by an episode of fulminant acute hemorrhagic pancreatitis two days before death. This resulted in thrombosis of the splenic and portal veins and generalized peritonitis. The immediate cause of death appears to have been fat embolization.

Dr. Delp: Dr. Lambert, what about the coronary vessels? Were they patent?

Dr. Lambert: She had very slight coronary arteriosclerosis.

Dr. Delp: Are there any questions of Dr. Lambert?

William Hamilton (fourth year medical student): Was there active bleeding in the gastrointestinal tract?

Dr. Lambert: No, there was not.

Mr. Gard: How did the adrenals look?

Dr. Lambert: The adrenals showed only slight lipoid depletion due, presumably, to stress.

Mr. Hall: Do you think that this patient had essential hyperlipemia?

Dr. Lambert: No.

Mr. Hamilton: How do you explain this high level of cholesterol in a mild diabetic?

Dr. Lambert: I do not know. She probably had hyperlipemia secondary to her diabetes or to the chronic pancreatitis.

Mr. Hamilton: Did you say there was evidence of chronic pancreatitis, or was this just a case of acute pancreatitis?

Dr. Lambert: This patient had chonic pancreatitis with a terminal acute pancreatitis.

Dr. Delp: I think we should accept this as a case of diabetes mellitus. It has the appearance of being a relatively mild diabetes. It would be convenient to tie the pancreatitis and diabetes together in a causal relationship, but not reasonable. I believe that the hyperlipemia must be explained on the basis of the diabetes mellitus and the disturbances in metabolism attending it. This, I feel, is not uncommon in the extremely obese diabetic. Most patients with extensive xanthomata diabeticorum and lipemic serum are extremely obese.

I suspect that the most important item in the management of this patient—weight reduction—was instituted two years before, but she did not follow it. This could have been much more important than insulin. Unfortunately, she was getting little or no insulin. I believe that she had extensive vascular disease as a result of her long-standing hyperlipemia, because I think that it continued over a period of four years, similar to what we find in patients with lipoid nephrosis. Those patients also have extensive changes in the cerebral and coronary vessels, as well as the renal vessels.

Summary

Dr. Delp: The patient was a known diabetic who came in with acute, severe abdominal pain suggesting a ruptured viscus. The initial absence of physical signs of peritonitis suggested acute visceral injury; the later appearance of peritoneal irritation pointed to acute pancreatitis as the likely diagnosis. In retrospect, this seems clearly to have been the primary feature of the terminal illness. Diabetic acidosis must have been of secondary importance.

Xanthomata, hypercholesterolemia, and the originally low serum sodium values were interesting but not helpful in recognition of the acute illness.

Pathological Anatomical Diagnosis

Lithiasis of the pancreatic ducts.

Focal remote fat necrosis in pancreas with foreign body giant cell reaction.

Acute hemorrhagic pancreatitis, advanced, with extensive fat necrosis and hemorrhage of the peripancreatic, omental, mesenteric and retroperitoneal fat; thrombophlebitis of the splenic vein and portal vein.

Fibrinous and hemorrhagic peritonitis with 500 ml. of serosanguineous cloudy fluid.

Hyalinization of the islets of Langerhans of the pancreas, moderate.

Intercapillary glomerulosclerosis of kidneys, slight.

Arteriolar nephrosclerosis and arteriolar sclerosis of pancreas, moderate.

Fatty metamorphosis of the liver, advanced.

Fat emboli of small vessels of brain, lungs, and kidneys.

Xantomatosis involving skin, bone marrow of vertebrae, spleen, and interstitices of kidneys.

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Miss Bernice Szukalla, associate director of nursing service at Denver General Hospital since 1951, has been appointed director of nursing service at the University of Kansas Medical Center. She succeeds Miss Harriet Arnold who has become director of nurses at Rhode Island Hospital in Providence.

THE KANSAS PRESS LOOKS AT MEDICINE

Editor's Note. In this section the JOURNAL *reproduces editorials relating to medicine which have appeared in the lay press. An effort is made to include both favorable and unfavorable comments, and the Editorial Board in no instance assumes responsibility for the opinions expressed.*

DOCTORS OUGHT TO DONATE ONE DAY'S WORK

Governor Docking believes doctors ought to "spend one day a week taking care of public needs," he said Thursday.

He said doctors are educated at state schools and are provided "offices" at hospitals built by the public. The governor said he believes doctors owe something to the public.

He spoke in connection with an announcement that welfare departments are being directed to hold welfare medical payments to an average of $6.50 per welfare client per month. . . .

He said he never had been able to see why relief funds should be spent to help support doctors who are educated by the state and are making plenty of money.

He said he supposed he would get a telegram from some doctor somewhere who would say he wasn't making plenty of money.

"When you get a tight union such as the AMA (American Medical Assn.) or the Teamsters union, you get a closely co-ordinated group it's hard to buck," Docking remarked.

He hastened to add he was not comparing the standards of the AMA and the Teamsters, but said both are "tight unions."

He was asked if it weren't true the medical aid welfare payments went to hospitals and druggists as well as to doctors.

He said he believed the percentages going to each group are different in the various counties and that the three "battle among themselves" for a share of them.—*Mal Higgins in Topeka State Journal, October 10, 1957.*

REPLY

Quoted below is a press release issued by Dr. Barrett A. Nelson, president of the Kansas Medical Society, in answer to the governor's statements.

This is the third time the governor of Kansas has singled out the medical profession for an official attack. When he privately tells whoever will listen to him that he doesn't like doctors, that is his own business, as is the private opinion the doctors might have of him.

But when the governor speaks to the people a responsible statement should be forthcoming.

The Kansas Medical Society has twice officially requested audience with the governor about health care for the indigent but has not been invited to do so. When it became obvious Mr. Docking was ignorant upon his favorite subject, this Society then asked some of his friends to carry the true story to him.

Even that failed and what should have been resolved in orderly discussion must now be answered in public because Mr. Docking has once again elected to use the welfare population as his political pawn.

The governor speaks of doctors educated at government expense. May he remember that engineers, lawyers, veterinarians and bankers, too, are educated at government expense and while one hundred doctors graduated last June from the University of Kansas School of Medicine, there were thousands of graduates in other fields from the five state-operated schools in this state. And a doctor of medicine spends much more of his own money to complete his education than does the student in almost any other professional field. If the governor wishes to be consistent, what is his opinion of the obligation those business and professional persons may have to repay their education? Should they, too—the grocer, the farmer, the insurance man, and the banker give in addition to the taxes they pay for the operation of their government, its elected officials, its employees and its wards—should they pay in addition to that one-sixth of their gross income to the welfare client as the governor is asking medicine to do? Or should the doctor of medicine alone be called upon to do this?

A further point we would be glad to have straightened out with Mr. Docking is that less than one-half the doctors in this state received their education at Kansas expense. We have the figures to prove this if Mr. Docking wants them. Moreover, almost half of the Kansas doctors went to private schools that are not supported by tax funds.

But that is merely to answer his peevish outburst. He is just as wrong about the money doctors make from their welfare work and that issue is important, not only to the person on relief, but to everybody.

We declare to the people of Kansas that it was not Mr. Docking who advocated a ceiling of $6.50 per client per month, but that the Kansas Medical Society suggested and negotiated this figure with the Board of Social Welfare and with the Legislative Council in 1954. The people may recall that both of those dates were well before Mr. Docking was in position to speak for the State of Kansas.

We also have some information on why the pro-

gram has not uniformly been placed into effect before this time and will tell him that if he wants to listen.

There are a few areas, most of them sparsely settled, where physicians obtain usual fees for welfare services. For the most part, those are counties in which the welfare load is usually high and not only the doctor but the grocer and others derive a considerable part of their income from such work.

The vast majority of welfare health service is rendered at one-fourth usual charges and less. We can prove this fact and if the governor pursues his false accusations with one single additional irresponsible public comment, we will give the people of this state the figures as they really are, figures which Mr. Docking has available to him now or at any time he cares to have them.

In the meantime, the doctors of Kansas hold themselves ready, willing, and eager, as they always have, to render medical service unhesitatingly wherever and whenever it is needed, regardless of likelihood of subsequent compensation."

Medical Missionary Dies

Dr. Roy Kenneth Smith, a medical missionary who spent many years of his professional life in Korea, died in California on July 31, according to information reaching friends in Kansas recently. He was known in this state through having spent the period from 1942 to 1946 as resident physician at the Kansas Tuberculosis Sanatorium in Larned. Dr. Smith, ordained a minister by Solomon Presbytery, Kansas, in 1944, served the Presbyterian Church in addition to the medical profession during his tours of duty overseas.

James B. Weaver Laboratory Opened

Announcement was made last month of the opening of the James B. Weaver Laboratory for Orthopedic Surgery at the University of Kansas Medical Center. The laboratory is a memorial to the physician who was on the faculty of the school for 30 years before his death on April 30, 1956, and who for 10 years was head of the section of orthopedic surgery.

The new facility is a completely equipped laboratory for clinical chemistry, and it will be used for research in orthopedics. It contains the "bone bank," a project founded and used extensively by Dr. Weaver. The bank contains human bones used for transplants and grafts in treatment of crippled children and reconstructive surgery in adults.

Initial work in the laboratory will be directed by Dr. Leonard F. Peltier, professor of surgery and successor to Dr. Weaver as head of the orthopedic section. It will be a continuation of work Dr. Peltier initiated at the University of Minnesota, a study of fat embolism. A grant from the United States Public Health Service will permit continued research in this line.

A James B. Weaver Fund is being set up to accept cash gifts through the University of Kansas Endowment Association, and all monies received will be used for investigative work in orthopedics.

English Physician Appointed

Dr. L. R. C. Agnew, an English physician who was graduated from the University of Glasgow, has been appointed chairman of the department of the history of medicine at the University of Kansas School of Medicine, according to a recent announcement by Dr. W. Clarke Wescoe, dean of the school. The appointment by the Kansas Board of Regents carries with it the faculty rank of associate professor.

Dr. Agnew came to America as an American Cancer Society research fellow at Yale University School of Medicine in 1951. He then served as an associate research professor of pathology at the University of Florida for two years. Immediately before joining the Kansas faculty he was resident tutor in premedical studies at Lowell House at Harvard University.

The department was established by the late Dr. Logan Clendening and, since Dr. Clendening's death 12 years ago, has been directed by Dr. Ralph H. Major. Dr. Major has added valuable books to the historical library through his world-wide travels and has attracted many unique gifts. He is now working on a catalogue of the collection, one of the four great history of medicine libraries in the United States.

Basic Science Examinations

The Kansas Board of Basic Science Examiners will give examinations in the subjects of anatomy, bacteriology, chemistry, pathology, and physiology on November 25 and 26, 1957, in the auditorium of Wahl Hall, University of Kansas Medical Center, Kansas City. Satisfactorily completed applications for examination must be submitted at least 30 days prior to the examination. Application blanks and other information can be obtained from R. E. Stowell, M.D., Secretary of the Kansas Board of Basic Science Examiners, Kansas City 12, Kansas.

PHYSICIANS' ACTIVITIES

Dr. Donald L. Rose, of the University of Kansas Medical Center, has been named president of the American Congress of Physical Medicine and Rehabilitation for the 1957-1958 term.

Membership in the International College of Surgeons was conferred last month on **Dr. Wilfred Cox,** Wichita.

Dr. R. C. Anderson, who has been manager of the Veterans Administration Hospital in Topeka since 1946, has gone to Columbus to become assistant commissioner of mental hygiene for the state of Ohio.

The Mississippi Valley Medical Society announces the appointment of **Dr. Clarence H. Benage,** Pittsburg, as director for a two-year term and of **Dr. Thomas P. Butcher,** Emporia, for a one-year term.

Dr. C. Henry Murphy, Topeka-Shawnee County health officer since 1951, is resigning this month to become health officer of Mendocino County, California.

Dr. Don E. Wilcox, Overland Park, has been appointed acting director of the Kansas City-Wyandotte County health department. **Dr. W. J. Madden,** Goodland, has been named health officer of Sherman County, and **Dr. Ross L. Jewell,** St. John, has been appointed health officer of Stafford County.

Dr. M. M. Tinterow, Wichita, became a fellow of the International College of Surgeons at a meeting in Chicago last month.

The name of **Dr. LaVerne B. Spake** has been added to the department of hearing and speech at the University of Kansas School of Medicine as the result of action taken by the board of regents. It is now the "L. B. Spake Department of Hearing and Speech" in recognition of the physician's long time leadership in establishment and development of the department. He has been a member of the faculty for 33 years.

Dr. Howard V. Bair, superintendent of the Parsons State Hospital and Training Center, attended the ninth Mental Health Institute at Cleveland, Ohio, last month and spoke on "Mental Deficiency: A Psychiatric Problem."

Dr. Arthur K. Owen, who began practice in Topeka in 1913 and pioneered in the field of radiology in that city, moved to Denver last month. He had retired from private practice some years ago, although he continued as a radiological consultant at the Veterans Administration Hospital in Topeka until June of this year.

Dr. E. M. Seydell, Wichita, went to Japan last month to attend a meeting of the Japanese Broncho-Esophagological Society and to present a paper there.

The American Society of Anesthesiologists, Inc., announces that **Dr. Paul H. Lorhan,** of the University of Kansas Medical Center, has been appointed chairman of its Committee on Medical Schools.

Dr. Victor J. Wall, Mahaska, was one of 21 physicians from the United States and Canada who received an award at the 42nd International Scientific Assembly of the Interstate Postgraduate Medical Association meeting in Chicago last month. Awards were given those who had attended ten or more assemblies since 1940.

Dr. Jerome S. Menaker, Wichita, presented a paper before a district meeting of the American College of Obstetricians and Gynecologists in Washington, D. C., last month.

Dr. H. H. Haerle, Marysville, announces that **Dr. Bernard Brock,** formerly of Mission, is now associated with him in practice. Dr. Brock was graduated from the University of Kansas School of Medicine in 1953.

Dr. Richard L. Sutton, Jr., of the University of Kansas School of Medicine, returned recently from a trip to Europe where he attended numerous dermatological meetings. He was also recently elected an hon-

orary member of the Sociedad Venezolana de Dermatologica, Venerologia y Leprologia of Caracas.

Plans to open an office in Louisburg were announced recently by **Dr. Robert B. Hodgson,** a graduate of the University of Kansas School of Medicine who is practicing in Mission.

"The County Medical Society and the American Cancer Society" was the subject discussed by **Dr. Horace M. Wiley** of Garden City at an area meeting of the American Cancer Society recently.

The American Academy of Pediatrics announces the appointment of **Dr. Herbert C. Miller,** of the University of Kansas Medical Center, to its Committee on Medical Education. Dr. Miller is also a member of the Section on Pediatrics of the National Board of Medical Examiners.

Dr. Conrad M. Barnes, Seneca, was one of the speakers at the third annual Symposium on School Health held at the University of Kansas in Lawrence last month. Dr. Barnes is chairman of the Kansas Medical Society's Committee on School Health.

Dr. Louise F. Richmond, Hutchinson, resigned as Reno County physician last month. The position has not yet been filled on a permanent basis, but **Dr. Marion E. Nunemaker** has agreed to serve in the post on a temporary basis.

A plaque honoring the memory of the late **Dr. James Lloyd Jensen,** Colby, has been placed in St. Thomas Hospital in that city.

Dr. Charles R. Svoboda, Chapman, and **Dr. George Steinberger,** Abilene, were speakers at a recent meeting of the Dickinson County unit of the American Cancer Society.

Dr. Marion C. Pearson, Concordia, recently became a member of the International College of Surgeons.

Dr. C. J. Kurth, Wichita, president of the National Guild of Catholic Psychiatrists, went to Galveston last month to preside at a meeting of the organization's executive committee.

Dr. Lewis L. Robbins, chairman of the psychotherapy research project at the Menninger Foundation, Topeka, has announced his resignation from that position, to be effective on June 1, 1958. He has accepted appointment as director of professional services at Hillside Hospital, New York City.

"What Everyone Should Know about Doctors" is the subject chosen by **Dr. J. Warren Manley,** Kansas City, for an address given to the Kansas City High Twelve Club recently.

Dr. Howard M. Lamborn, Jr., has announced the opening of an office for general practice in Leavenworth.

The American Medical Writers' Association announces the election of **Dr. Karl A. Menninger,** Topeka, as second vice-president.

Seven Kansans were inducted as fellows of the American College of Surgeons at a meeting in Atlantic City last month: **Dr. Ben H. Buck, Jr.,** and **Dr. Ernest P. Carreau** of Wichita; **Dr. Richard C. Tozer,** Topeka; **Dr. Raymond A. Schwegler,** Lawrence; **Dr. Francis L. Brochu** and **Dr. Charles A. Hunter, Jr.,** Kansas City, and **Col. George F. Peer,** Fort Leavenworth.

Dr. C. O. Hoover, Quinter, and **Dr. James Ruble, Jr.,** and **Dr. Kenneth J. Simpson,** Overbrook were pictured on the Dave Garroway "Wide, Wide World" television show on October 27. The program showed the life of a doctor in the "horse and buggy" days and in the present era in rural communities.

Dr. E. E. Tippin, Wichita, was speaker at a meeting of the Bethel College Women's Association, Hillsboro.

Plans to practice in Mission have been announced by **Dr. W. P. Pearce,** former instructor in the department of obstetrics at the University of Kansas Medical Center.

Dr. J. P. Berger, Wichita, was named president of the Kansas Division of the American Cancer Society at the organization's annual meeting in Hutchinson last month. **Dr. D. Cramer Reed,** Wichita, was elected delegate to the national board of directors meeting.

Plans to practice in Hays in association with **Dr. John Thurlow** and **Dr. Irvin Mattick** have been announced by **Dr. Roy Coffey,** a son of the late **Dr. Frank Coffey** of Hays. The young physician will begin practice in Hays upon completion of his assignment with the U. S. Air Force.

Dr. R. H. Ohman, Dodge City, discussed activities of the American Cancer Society at a district meeting of the organization in Dodge City last month.

The Cowley County Association for Mental Health sponsored a public meeting in Arkansas City last month with **Dr. Paul C. Laybourne,** of the University of Kansas Medical Center, as speaker.

Medical Assistants' National Meeting

Approximately 400 medical assistants from all parts of the nation gathered in San Francisco, October 4 and 5, for the first annual meeting of the American Association of Medical Assistants. Dr. Murray C. Eddy, Hays, advisor to the group, headed the Kansas delegation of 26 members.

Miss Maxine Williams, Kansas City, who played a major role in the formation of the national association, who served as chairman during the year of organization and was the group's first president, presided at all sessions.

Business meetings occupied a large portion of the time of the delegates, as might be expected for a new organization. However, programs were presented to instruct in basic human relations, medical nomenclature, x-ray work, laboratory work, assisting in office surgical procedures, and business office routines. One morning session was devoted to an exchange of ideas among the states on advantages of membership, increasing membership, programs, publications, training courses, duties of officers and chairmen, and placement bureaus.

Social events included a reception given by the American Medical Association, the California Medical Association, and the California Medical Assistants' Association at the Top of the Mark, a dinner at the Mark Hopkins Hotel, and a luncheon and banquet at the Sheraton Palace Hotel.

Mrs. Mary Kinn, Santa Ana, California, will serve as president of the group during the coming year, with Mrs. Lucille Swearingen, Bartlesville, Oklahoma, as president-elect. The 1958 meeting will be held in Chicago and the 1959 session in Philadelphia.

ANNOUNCEMENTS

Interim session, American College of Chest Physicians, Warwick Hotel, Philadelphia, December 2-3. Programs available through the College, 112 East Chestnut Street, Chicago 11, Illinois.

General practice review, University of Colorado Medical Center Postgraduate Course, 4200 East Ninth Avenue, Denver, January 13-18. Monday, Medicine; Tuesday, Pediatrics; Wednesday, Surgery; Thursday, Laboratory Medicine and Radiology; Friday, Obstetrics and Gynecology; Saturday, Trauma. Registration available for full course or selected days.

Part I examinations, American Board of Obstetrics and Gynecology, January 2, various cities. Candidates notified as to eligibility must submit case abstracts within 30 days of notification. Outline of requirements available from Board, 2105 Adelbert Road, Cleveland 6, Ohio.

Cash award and certificate of merit to be given by International Academy of Proctology for best unpublished contribution on proctology or allied subjects. Closing date for entries, February 1. Information available from Academy, 147 Sanford Avenue, Flushing, New York.

Symposium on fundamental cancer research, March 6-8, University of Texas M. D. Anderson Hospital and Tumor Institute, Houston. Topic is "Radiation Biology and Cancer."

Eight research fellowships available, Department of Pathology, New York University-Bellevue Medical Center. Stipends from $3,600 to $4,500 annually. Two senior fellowships available with stipends of $7,500. Write the Dean, 550 First Avenue, New York 16, New York.

Amebiasis

A Study of Incidence, Diagnosis, and Modes of Therapy

CHARLES R. PHIPPS, M.D., ***Wichita***

Amebiasis is a term that should be used to designate all conditions which result from the invasion of tissues by Endamoeba histolytica. Frequently the organism is present but symptoms will be minimal or absent. Amebic dysentery is only one of the many manifestations of the disease and is the exception rather than the rule. Amebiasis is cosmopolitan in its distribution and is not confined to the tropics. It is an important public health problem even here in the United States, and every general practitioner should be cognizant of this and be acquainted with its varied symptomatology and treatment.[3]

Incidence

The incidence of amebiasis is directly related to sanitation, but this should not distract the physician from being suspicious even though conditions of the surrounding community are apparently good. Terry states: "Studies on the incidence of amebiasis throughout the world indicate that the disease is found wherever it is suspected and looked for."[27] It is estimated that 6 to 10 per cent of the total population of the United States is infected. The incidence is higher in the lower economic areas but is sufficiently high in all areas to make it a serious concern to physicians and public health workers. Anderson et al.[3] believe the disease is perhaps even more common than syphilis or malaria in the United States and is considered by many authorities to be equally chronic and capable of relapse.

"Prevalence rates among veterans range from 10.1 per cent of those with domestic service only to 28.3 per cent of those serving in the China-Burma-India Theatre."[8] Institutional rates are far higher than in the general population. It can readily be seen that in areas with returning veterans and in areas in any way connected with institutionalization the incidence can be expected to be higher.

Etiology and Pathogenesis

Amebiasis is an infection in man and other mammals caused by a protozoan Endamoeba histolytica of the class Rhizopoda.[3] Infection occurs through ingestion of the organism. The organism is usually encountered in either the trophozoite or the cystic form. Trophozoites are destroyed by gastric secretions, but the cystic form passes unchanged to the distal ileum and colon where the encystment takes place. Here the cysts are broken down by the action of intestinal secretions, activating the four nucleated cysts into four motile trophozoites.[24]

Invasion of the bowel wall takes place by three means: (1) cytolytic enzymes secreted by the trophozoites, (2) motility of the trophozoites and (3) the intestinal bacteria which produce cytolytic enzymes, lower tissue resistance, and produce infection and inflammation. The trophozoites multiply by binary fission in the tissues and then pass to the lumen of the bowel where encystment always takes place. Cysts so produced will not reinfect the host unless they are swallowed and reach the colon via the stomach. The number of cysts excreted per day varies between 330,000 to 45 million and occurs in cycles.[23]

The depth of invasion into the bowel wall is usually limited by the resistant muscularis mucosae, although the ulcers may extend into it and rarely perforate. It is because of this resistance that the classical Erlenmeyer flask-shaped ulcer is formed. Even though this is classical, ulcers may vary in size, shape, and appearance.[30]

Thrombotic lesions in the portal vein follow the invasion or erosion of the organism into the mesenteric veins and subsequently give rise to hepatic amebiasis. If the liver is normal, the majority of amebas do not survive there. In the hepatitis stage there is a fatty infiltration and degeneration of liver cells associated with a low grade infection. As this inflammation becomes chronic, an abscess is formed. In early and small abscesses there are numerous amebas, but as the pathology becomes chronic these decrease in number. The contents of the abscess is characteristically chocolate colored. Abscesses are usually located in the right lobe and may vary from 1 to 20 cm. in size.[23]

If there is erosion into the mesenteric lymphatics, the amebas enter the lungs via the heart and may enter the systemic circulation with resultant lesions in almost any organ. Pulmonary amebiasis may be sec-

This is one of 11 theses, written by fourth year students at the University of Kansas School of Medicine, selected for publication by the Editorial Board from a group judged to be the best by the faculty at the school. Dr. Phipps is now serving his internship at Wesley Hospital, Wichita.

ondary to hepatic amebiasis by direct extension or may be hematogenous in origin.[24]

Symptomatology

The symptoms of amebiasis are many and varied and, like many other diseases, this one often simulates other disease entities and is misdiagnosed. The symptomatology discussed here will be referable to intestinal amebiasis, and symptoms of extraintestinal amebiasis will be discussed under the various complications.

Sodeman says, "In the colon amebiasis may manifest itself in one of four ways: (1) There may be no symptoms; (2) There may be general evidence of low-grade infection; (3) There may be active colonic symptoms with or without diarrhea or dysentery; or (4) There may be extracolonic localizing symptoms simulating appendicitis, gallbladder disease, peptic ulcer, or other disease entities."[26]

Acute amebic dysentery may be mild, moderate, or fulminating. The incubation period may be a week or many months. Onset may be sudden or follow repeated attacks of diarrhea. The patient usually has severe abdominal pain, diarrhea, cramps, and tenesmus and may have chills, nausea, vomiting, and dehydration. The stools, varying from 15 to 35 daily, usually contain a considerable amount of mucus and blood. Fever is usually absent but in severe cases may be present.[23] This form of the disease is rare in this country. Sodeman[26] estimates that 95 per cent of patients with amebiasis do not have active diarrhea or dysentery.

Chronic intestinal amebiasis in contrast to acute intestinal amebiasis begins insidiously with variable symptoms. Constipation is a more constant feature than diarrhea, although diarrhea may occur late or may alternate with constipation.[27] Various authors have described numerous symptoms which include the following: diarrhea, constipation, abdominal gaseous distention, capricious appetite, weight loss, dull headache, sleepiness, unpleasant dreams, poor memory, nervous irritability, muscle aches, fever or subnormal temperatures, arrhythmias, tachycardia, vasomotor distrubances and anemia.[11]

Weiser et al.[30] in a breakdown of symptoms on their series of 50 cases noted the frequency of the following: (1) abdominal pain, 80 per cent of all patients—being more frequent in the lower quadrants but capable of occurring in any quadrant; (2) diarrhea, 48 per cent of all patients: (a) mucoid, 40 per cent; (b) watery, 8 per cent; (c) recurrent, 40 per cent of all patients with diarrhea; (d) continuous, 58 per cent of all patients with diarrhea; (e) alternating with constipation, 2 per cent of all patients with diarrhea; (3) nausea and vomiting, 28 per cent of all patients; (4) flatus (excessive), 34 per cent of all patients and (5) no symptoms, 6 per cent of all patients.

Physical Examination

General physical examination often reveals nothing of significance. Certain complications, however, such as hepatic or pulmonary infection may direct attention to the causative agent. Masses or generalized tenderness may be present, but at other times the abdominal examination is entirely normal. Digital examination of the rectum is usually normal except in far advanced cases, and then the ulcers are indistinguishable from those of tuberculosis.[4]

Complications

In this country complications, with the exception of hepatic involvement, are relatively rare. Many of these will be mentioned but not discussed. The discussion will involve only the more frequent complications.

Complications can be divided into two categories, local and distant. Local complications include perforation, rectovaginal fistula, appendicitis, diverticulitis, hemorrhage, stenosis, and ameboma formation. The symptoms of the first six are the same as when these clinical entities are due to some other etiological agent and need not be reviewed here.[30]

Pseudopolyposis, another local complication, is associated with chronicity, and the symptoms are generally those of colitis.[30]

Ameboma is important because of the difficulty in differentiating it from carcinoma. Ameboma is due to repeated invasion of the colon wall by E. histolytica with subsequent granulomatous formation. The most frequent locations are the rectum, cecum, transverse colon, sigmoid, and ascending colon. The clinical picture includes diarrhea, lower abdominal cramps, loss of weight, fever, palpable mass, obstructive symptoms, tenderness, filling defect by barium enema, and the disappearance of the lesion following antiamebic therapy. The mortality rate is approximately 40 per cent due to faulty diagnosis and surgical intervention for intestinal obstruction or neoplasm.

Distant complications include hepatic amebiasis, pulmonary amebiasis, amebiasis of the genitourinary tract, pylephlebitis, thrombosis of the vena cava or renal vein, prostatic involvement, cutaneous amebiasis, and abscesses of the brain, spleen, ovary, and testes. All of these, with the exception of hepatic amebiasis, are too infrequent to warrant a detailed discussion although they should always be considered when symptoms of these various organs occur.

The onset of symptoms in hepatic amebiasis may be acute or insidious.[30] It may follow within a few

weeks or even years following intestinal involvement. Confusion of the symptomatology with other forms of hepatic disease is common.

The symptoms of amebic hepatitis usually include a large tender liver, slight or no jaundice, tenderness in the upper right quadrant, digestive disturbances, fever, chills, and leukocytosis. One may or may not get a past history suggestive of amebiasis.[24,26] There is usually a disproportion between the signs and symptoms and the liver function studies. These studies are usually mildly abnormal or even normal.[30]

Often the diagnosis of amebic hepatitis must be made on clinical grounds plus serologic support without actual identification of the organism. Clinical signs of hepatitis with mild or absent jaundice, the mild abnormality of the liver function tests, the leukocytosis, the positive serologic test, and the response to specific therapy, usually constitute the evidence from which the diagnosis is made.[8]

Liver amebic abscesses usually have a sudden onset and are characterized by chills, fever, perspiration, pain, and tenderness in the upper right quadrant. The patient appears acutely ill and has varied gastrointestinal symptoms. There is marked hepatomegaly with rounded edges. Laboratory examination results include a marked leukocytosis with a shift to the left and often normal liver function test, but there may be a delay in the excretion of bromsulfalein and rarely a positive flocculation test. Parasites may be found in the stools of a third of the patients. X-ray examination shows an elevation, tenting, and fixation of the right half of the diaphragm, congestion of the base of the right lung, and some effusion in the right pleural cavity. The aspiration of chocolate colored pus confirms the diagnosis. Parasites may be found in a sixth of these aspirates.[23]

Diagnosis

The diagnosis of amebiasis can only be suspected by the history and physical examination; the final diagnosis rests in various laboratory techniques. These laboratory aids are: direct examination of the stools, culture, complement fixation test, sigmoidoscopic examination, x-ray, and miscellaneous aids.

Examination of the stools: As with other parasitic and bacteriologic diseases, the demonstration of the causative organism affords a conclusive diagnosis. The typical stool of the acute dysentery is reddish brown and contains considerable amounts of blood and mucus. The vegetative forms of the E. histolytica occur almost exclusively in liquid stools and deteriorate rapidly on standing, therefore these must be examined immediately or smears must be fixed for subsequent examination. Formed stools to be examined for cysts may be stored in an icebox overnight, but these will degenerate as time progresses.[26]

If the laboratory facilities or technicians are not immediately available, a preservative may be added to liquid stools to preserve the trophozoites. The fixative recommended by Seneca[24] is polyvinyl alcohol (PVA) and is formulated as follows:

Dissolve at 75° C.	
Powdered PVP	5.0 gm.
Glycerol	1.5 cc.
Glacial acetic acid	5.0 cc.
Saturated $HgCl_2$ solution in water	93.5 cc.

The stools are mixed in three or more parts of the fixative, and this is suitable for staining for several months and also easy to ship. Although this is useful to preserve trophozoites, the cysts and ova become distorted and the solution cannot be used to preserve them.

In the collection of formed stool an average of six stool specimens should be obtained, preferably on different days because of the cyclic nature of the cysts. No castor oil, mineral oil, or barium should be given prior to examining the stools. However, diagnostic efficiency is greatly enhanced if a mild saline purgative or saline enema is given before the last specimen is obtained. This should be done on the last specimen rather than one of the preceding because this may interfere with examination of the stools for several days. Sodeman[26] says this increases the per cent of positive stools from 65 to 90.

MacDonald[13] describes the following method for microscopic examination. For a direct smear a small amount of feces is obtained on an applicator and placed on each end of a glass slide. These may be mixed with a drop or two of saline. One is covered with a cover slip and examined immediately for motile forms while to the other a drop of Donaldson's iodine, D'Antoni's iodine, or fresh Lugol's solution is added and covered with a cover slip. This one is examined for cysts. This direct smear may also be strained with iron-hematoxylin stain and examined for either trophozoites or cysts.

When the above method for microscopic examination is unproductive, then each specimen should be concentrated as this will frequently reveal cysts when they were not observed on the direct smear. Two concentration methods are described by Seneca,[24] the zinc sulfate centrifugal flotation and the formalin-ether sedimentation.

Zinc Sulfate Centrifugal Flotation:[24] 1. "Suspend feces, 1 to 10 parts, in tap water and filter through wet cheesecloth, and put about 10 cc. in a Wassermann tube.

2. "Centrifuge for 45 to 60 seconds at 2,500 rpm, decant the supernatant, resuspend in water to fill the

tube. Repeat two or three times, until the fluid is clear.

3. "Decant fluid and resuspend in zinc sulfate solution (sp. gr. 1.18 and 33 per cent) and centrifuge for 45 to 60 seconds.

4. "Remove several loopfuls of the floating surface material or film and add to a drop of Lugol's iodine on a slide and examine under the low power and high power lenses of the microscope."

Formalin-Ether Sedimentation:[24] 1. "Centrifuge 10 cc. saline suspension of feces, filtered through wet cheesecloth, three to four times until the supernatant is clear.

2. "Decant supernatant and replace with 10 per cent formalin. Mix thoroughly and set test tube aside for five minutes.

3. "Add 3 cc. ether and shake vigorously.

4. "Centrifuge at relatively low speed for two minutes. There will be a small amount of sediment containing the cysts and ova, a layer of formalin, a plug of debris, and a surface layer of ether."

Culture of amebas: E. histolytica can be cultured from stools and amebic abscesses but Seneca[24] doesn't believe this is practical for diagnostic purposes. Powell[20] believes cultures are inferior to direct examination but that they might be beneficial as a supplement to direct examination.

Complement fixation test: There is considerable controversy as to the reliability of this test in diagnosing amebiasis. McDearman and Dunham[15] found this test of value in diagnosing extraintestinal amebiasis. They found that 86 per cent of their proved cases of extraintestinal amebiasis had positive tests; 32 per cent of their proved intestinal amebiasis had positive tests; 16 per cent of their equivocal cases had positive tests, and none of their controls had positive tests.

The greatest difficulty with the test is that there is no standard antigen. The antigenic material also contains bacterial fractions which may give false positive reactions.[24] Commercial antigens are available, and these were used in McDearman and Dunham's series.

Kenney et al.[10] state that in evaluating the complement fixation test for amebiasis, it is important to remember that a sufficient interval is required between the time of infection and the detection of antibodies and, as with other complement fixation tests, two tests should be done to determine a rising or falling titer. They don't believe this serologic test alone establishes a diagnosis but they do believe the following: (1) It can be used with a feeling of security in eliminating suspected liver involvement; (2) It can help to suspect active amebiasis with vague symptomatology and negative stools; (3) It can help to evaluate the degree of involvement in known cases of amebiasis; and, finally, (4) It can aid in therapy by indicating the course to follow when ameba are apparently absent from the stool.

Sigmoidoscopic examination should be performed in every suspected case. The lesions may consist of small pinhead irregular areas of inflammation surrounded by hyperemia and edema, or small projecting nodular elevations with a small opening at the apex. These latter areas contain a gelatinous material with motile trophozoites. When these areas are encountered, this material should be placed on a slide and immediately examined for the trophozoites.[13] Seneca[24] reports, in a series of 300 patients, 211 were found positive by this method.

The patient is prepared by giving an enema the night before examination and then cleansing enemas prior to examination.

X-ray examination: Bargen[4] believes a barium enema is important in patients with amebiasis, although the results are usually negative. He believes this aids in ruling out other intestinal lesions. When positive signs of amebiasis are present, they are usually located in the cecum and ascending colon and usually consist of a deformity that resembles other chronic ulcerative diseases. The x-ray evidence of hepatic involvement has already been described.

Miscellaneous findings: The erythrocyte sedimentation rate is increased and the blood picture reveals hypochromic anemia. There is leukocytosis with a liver abscess. Liver function tests may be normal or they may show delayed excretion of Bromsulphalein and positive cephalin flocculation.[24]

Treatment

The purpose of treatment is threefold: (1) destruction of amebas in the tissue, (2) destruction of amebas in the lumen of the intestine and (3) healing of the ulcerative lesions.[4]

Management of patients with amebiasis must be individualized; there is no highly satisfactory drug for treatment. Many drugs provide effective control of acute amebiasis, but many have toxic side effects and the relapse rate is frequently high. Drugs that are effective against tissue forms of the ameba have little value in intestinal amebiasis and vice versa. Therefore, treatment frequently consists of a combination of both types of drugs.[14] Treatment will be discussed under four headings: treatment of intestinal amebiasis, treatment of extraintestinal amebiasis, surgical treatment, and symptomatic treatment.

Treatment of intestinal amebiasis can be subdivided into: antibiotic, halogenated hydroxyquinolines and arsenicals.

Numerous antibiotics have been used in treatment of amebiasis, but only a few have been proved of value. Many of these, including penicillin and streptomycin, are not considered as acceptable antiamebic drugs. The following is a summary of the reports McHardy et al.[16] garnered from the literature.

Antibiotic	*No. of Patients*	*No. of Recurrences*	*Failure Incidence*
Chlortetracycline (aureomycin)	697	116	16.6%
Oxytetracycline (terramycin)	435	37	8.5%
Bacitracin	205	65	31.2%
Chloramphenicol	72	53	73.6%
Neomycin	22	14	63.6%
Fumagillin	119	28	14.0%

Aureomycin, Terramycin, and fumagillin, by this survey, were the most effective antibiotics. This seems to be consistent with most surveys although results vary widely, as can be seen in some of the following:

Investigator	*% Relapse with Terramycin*	*% Relapse with Aureomycin*
Weiser et al.[30]	63	38
Crosnier et al.[5]	0	40
Abd El-Ghaffar et al.[1]	42	

The usual dosage of Terramycin and Aureomycin is 500 mg. every six hours for a total of 20 gm. and fumagillin in 10-20 mg. doses three times a day for 10 days.

Villarejos[29] believes erythromycin is a valuable therapeutic agent. In a series of 36 patients he had 3 per cent relapse, using an initial dose of 800 mg. and a daily dosage of 1.2 gm. for five days. Other dosage schedules were used, but this was the most effective. Jung et al.[9] also found erythromycin as well as fumagillin to be an effective amebacide.

Puromycin, a new antibiotic, was used in the treatment of 28 patients. It was found to be effective in patients who harbored only cysts, but was not effective in patients with ulcers and trophozoites. A combination of this and Achromycin was effective.[2]

Halogenated hydroxyquinolines: Chiniofon, Diodoquin, and Vioform are still in use despite the fact that other drugs are more effective.[22] It should be stated that these drugs in combination with other amebacides are often effective. Chiniofon (iodoxyquinoline sulfonic acid) is used in cyst carriers in a dosage of 0.75 to 1 gm. three times a day for 8 to 10 days. The side effects of these compounds are few.

Arsenicals: Carbarsone, Milibis, thioarsenites and Arsthinol are some arsenicals that have been used. Carbarsone, in a dosage of 0.25 gms. twice a day for ten days and then repeated after a two-week interval, is superior to most arsenicals. Arsthinol has been used recently with encouraging results. The greatest disadvantages with these drugs are their potential toxic effects.[24]

A combination of different drugs has proved effective. Resotren, a new drug with a chemical combination of chloroquine and chiniofon, has recently been reported by Pfannemueller[19] to be effective against intestinal and extraintestinal amebiasis. He reviewed a series of 42 patients, 5 of which had uncomplicated amebic dysentery, 31 had amebic hepatitis and 6 had liver abscesses. All of the dysentery patients and those with abscesses had a clinical cure and negative stools. Thirty of the 31 hepatitis patients had a clinical cure while 29 had negative stools. The dosage of 40 tablets was given as follows:

1st day	3 x 2 tablets	6
2nd to 5th day	4 x 1 tablet	16
6th to 10th day	3 x 1 tablet	15
11th to 12th day	1 x 0.5 tablet	3
12 days		40

If the condition of the patients was considered severe, a further course of 20 tablets in four days was given eight days after the first course. If an acute liver abscess was present, chloroquine was also given for the first two to three days.

Radke[21] has used a combination of Atabrine and carbarsone with only a 12 per cent relapse rate.

Loughlin and Mullin[12] have found a combination of diiodohydroxyquinoline, chloroquine, bacitracin, and neomycin to be quite effective. By using the combination they could reduce the dosage of the latter three drugs.

Other combinations used have been streptomycin, polymyxin, neomycin, and bacitracin. Shafei,[25] in a series of 30 cases, reported a 70 to 90 per cent cure depending on dosage.

A new drug, triamar, under preliminary study has been indicated as a potent amebacide. It is a combination of 60 per cent Diodoquin and 40 per cent glycolylarsanilic acid.

Treatment of extraintestinal amebiasis is completely different because in general the types of drugs used for intestinal amebiasis are ineffective for extraintestinal amebiasis and vice versa. Chloroquine (Aralen) and emetine are the two drugs used most commonly, but erythromycin and fumagillin have shown encouraging results.

According to most investigators, including Hamilton,[7] chloroquine is now considered the drug of choice. The dosage is 1.0 gm. of chloroquine diphosphate daily for 2 days and then 0.5 gms. for 19 days. The drug has few side effects. If toxic symptoms do appear, the drug is discontinued for 24 to 48 hours and then resumed.

Emetine has such a potential toxic effect it should be reserved for those patients where other measures have failed.[24]

Nelson et al.[18] have received favorable results with erythromycin in the treatment of amebic hepatitis. In a series of 28 patients, 20 showed a definite favorable response. The dosage for adults was 1.0 gm. in divided doses per 24 hours for 14 days. Six of the patients that didn't respond to erythromycin showed a good response to chloroquine.

Novobiocin is amebacidal and has a bacterial spectrum similiar to erythromycin. It may prove to have a place in the treatment of extraintestinal amebiasis.[24]

It is obvious that many of the complications of amebiasis have surgical significance and should be treated as such. These include appendicitis, perforation with peritonitis, massive hemorrhage, ameboma, cicatricial stenosis, pseudopolyposis, hepatic abscess, pleuropulmonary complications, cerebral abscess, cutaneous ulceration and abscess, splenic abscess, and genitourinary complications.[6]

The mortality rate following operations on untreated or undiagnosed patients with amebiasis is considerable. Theron[28] gives the following reasons: (1) reduced resistance as a result of chronic infection, (2) interference with wound healing with an occasional occurrence of ulceration and sloughing of the skin of the abdominal wall, (3) the tendency to breakdown at the suture line after operative intervention on the bowel, (4) development of acute amoebic dysentery in the immediate postoperative period, and (5) a mild hepatitis during the postoperative period.

Symptomatic treatment: Because of possible nutritional disturbances, avitaminosis, and hepatic dysfunction, patients should be put on a high carbohydrate, high protein, high vitamin diet. Parenteral injections of vitamin B_{12} two to three times a week are helpful. Iron and liver extract may be indicated for anemia. Secondary infections should be controlled with the proper antibiotic.[24]

"In assessing the results of therapy it is essential that strict criteria of cure be established. Certainly a patient should become and stay free of all symptoms and signs attributable to amebiasis. Repeat stool examinations at intervals of several weeks with negative findings over a period of one year would seem the minimum requirement in post-treatment follow-up."[55]

Summary and Conclusion

1. Amebiasis is an endemic disease in the United States, estimated by some authorities to affect 6 to 10 per cent of the total population.

2. Chronic intestinal amebiasis is the most frequent form of the disease in the United States and therefore should be suspected when vague abdominal symptoms are present. Physical examination is usually non-revealing.

3. Complications, with the possible exception of hepatic involvement, are unusual but should always be suspected and looked for when symptoms of the various organs occur.

4. Since symptoms are variable and physical signs are meager, the final diagnosis always rests with demonstration of characteristic lesion of various organs and/or demonstration of the organism, E. histolytica. Sigmoidoscopy has proved helpful. The complement fixation test is of value in the diagnosis of extraintestinal amebiasis but is of little diagnostic value in intestinal amebiasis.

5. There is no highly satisfactory treatment for amebiasis. Terramycin and fumagillin are probably the most effective antibiotics while carbarsone is the best arsenical available. A combination of carbarsone with one of the antibiotics is probably the treatment of choice for intestinal amebiasis. According to most investigators, chloroquine is still the drug of choice in extraintestinal amebiasis. Several other drugs and combinations of drugs have proved to be effective.

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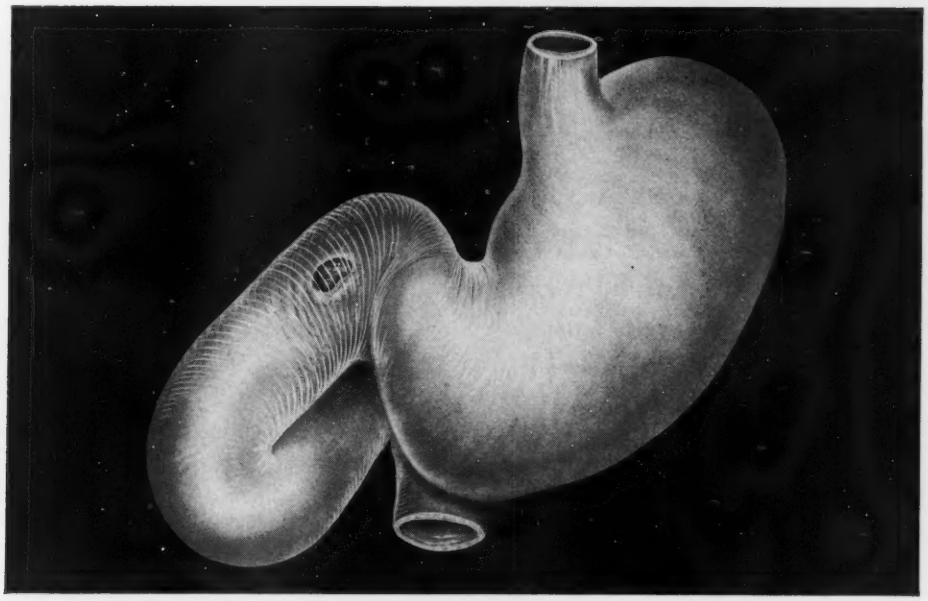

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Muscular Dystrophy Abstracts

Muscular Dystrophy Associations of America, Inc., has announced a new service, the publication of a series of monthly muscular dystrophy abstracts for research scientists and others interested in muscular dystrophy and related diseases. The project is being carried out with a subsidy from the Association by the Excerpta Medica Foundation of New York and Amsterdam, Holland.

The first booklet, of which 300 have been distributed, presents summaries of 59 recent papers by scientists in this country and abroad. The papers are classified into two groups: abstracts from the clinician, concerned mainly with general anatomo-clinical publications, and abstracts of articles concerning the basic sciences relating to muscular dystrophy.

The abstracts are sent to association research grantees and clinic workers and other professional individuals and institutions.

The association has made grants for nearly 100 research projects throughout the world and is establishing an Institute for Muscle Disease adjacent to the New York Hospital-Cornell Medical Center in New York City as a major center for research into muscular dystrophy and related diseases. In addition, 41 clinics in the United States provide physical therapy and other care for patients. Funds for MDAA's work are raised by more than 300 chapters.

Course in Medical Technology

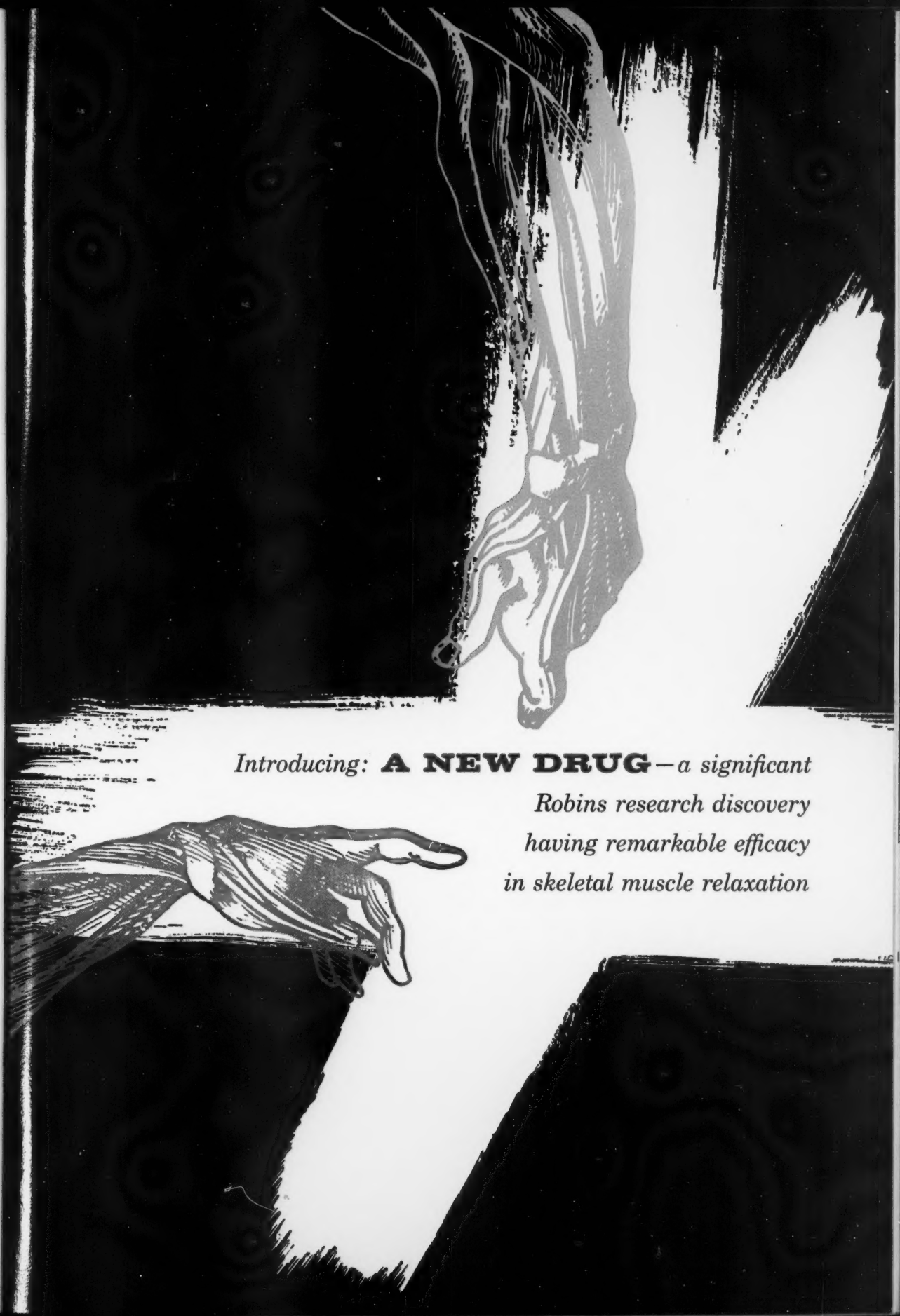
The ninth annual postgraduate course in medical technology will be offered at the University of Kansas Medical Center, Kansas City, January 6-8. Among the 37 faculty members for the course are Dr. George E. Cartwright of Salt Lake City, Dr. Bradley E. Copeland of Boston, and Dr. Robert D. Wise of Philadelphia.

Subjects of current interest in microbiology will be presented on January 6; hematology will be discussed on January 7, and clinical laboratory medicine and a chemistry symposium will make up the program on January 8. Panel discussions will follow the presentations.

Participants will have an opportunity to attend four workshops, choosing from 15 to be offered. Enrollment fee for the three days is $12. Programs may be obtained from the Department of Postgraduate Medicine, University of Kansas Medical Center, Kansas City 12, Kansas.

A.M.A. Sets Up Research Foundation

The American Medical Research Foundation recently was established by the A.M.A. Principal purposes of the foundation will be: (1) to promote the betterment of public health through scientific and medical research; (2) to plan and initiate scientific and medical research, and (3) to collect, correlate, evaluate, and disseminate results of scientific and medical research activities to the general public. Voting members of the foundation will be A.M.A. trustees. Meetings will be held annually at the time of the A.M.A. annual sessions.



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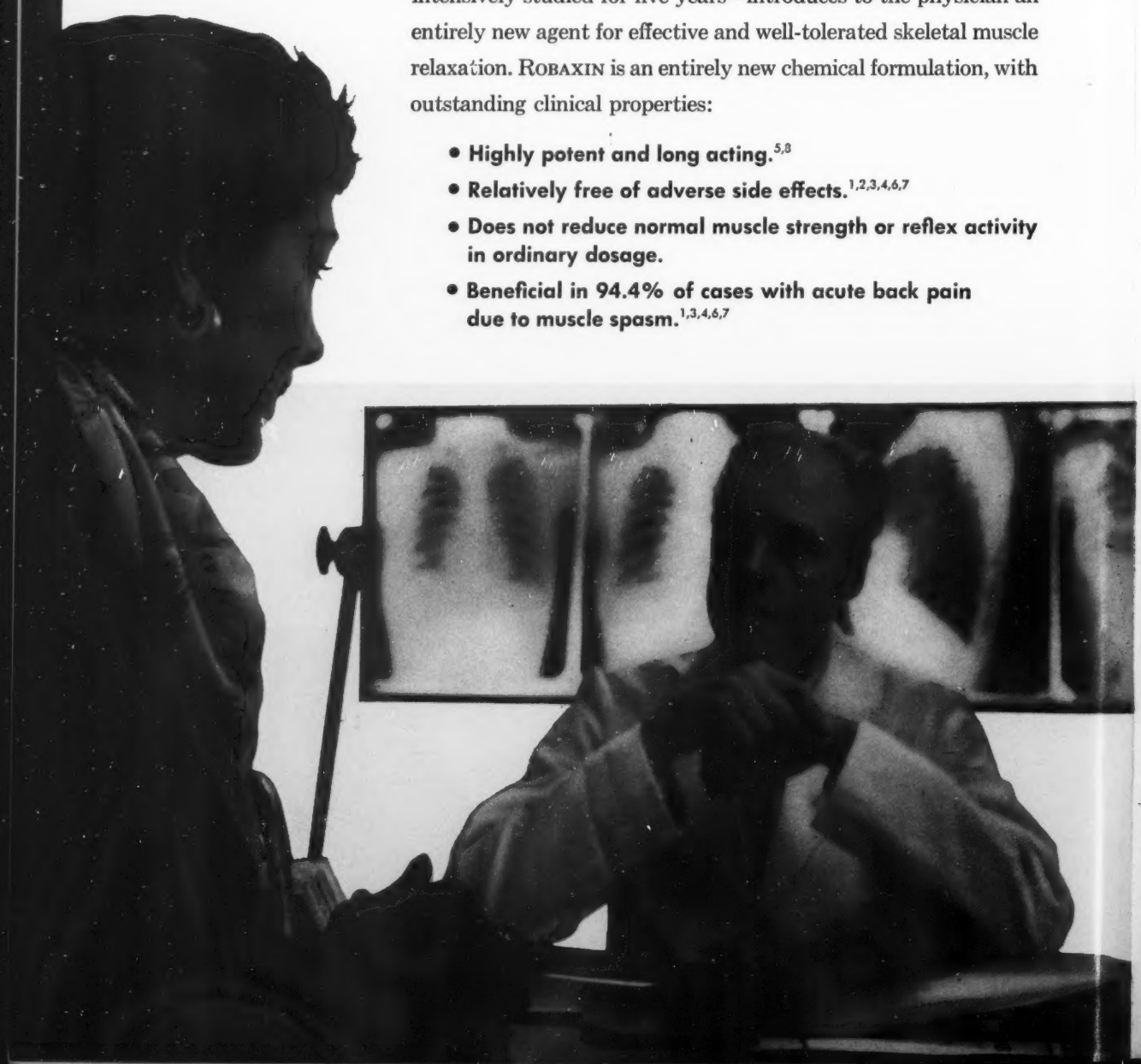

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Disease entity	*No. of Cases*	*Duration of Treatment*	*Dose per day (divided)*	*Response*				*Side Effects*
				Marked	*Mod.*	*Slight*	*Neg.*	
Acute back pain due to								
(a) Muscle spasm secondary to sprain	18	2-42 days	3-6 Gm.	17	1	0	0	None, 16; Dizziness, 1; Slight nausea, 1.
(b) Muscle spasm due to trauma	13	1-42 days	2-6 Gm.	8	1	3	1	None, 12; Nervousness, 1.
(c) Muscle spasm due to nerve irritation	5	4-240 days	2.25-6 Gm	4	1	0	0	None, 5.
(d) Muscle spasm secondary to discogenic disease and postoperative orthopedic procedures	30	2-28 days	1.5-9 Gm.	24	3	0	3	None, 25; Dizziness, 1; Lightheadedness, 2; Nausea, 2.*
Miscellaneous (bursitis, torticollis, etc.)	6	3-60 days	4-8 Gm.	6	0	0	0	None, 6.
TOTAL	72			59	6	3	4	

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BOOK REVIEWS

Current Surgical Management: A Book on Alternative Viewpoints on Controversial Surgical Problems. Edited by John H. Mulholland, Edwin H. Ellison, and Stanley R. Friesen. Published by W. B. Saunders Company, Philadelphia, 1957. 494 pages. Price $10.

The experience and judgment of 76 contributors are focused upon 28 controversial surgical problems. Many of the names are familiar as authors of recent articles on these problems. However, in this instance they have been specifically challenged by the editors to present the case for one form of operative management in a symposium of alternative methods. The articles are written for this purpose and have not appeared elsewhere.

The editors state that the creation of this volume arose out of the inclination of surgeons to argue their differences. Each "problem" is presented with a brief preamble by one of the editors who, it is admitted, finds some difficulty in remaining non-partisan. They add that a book such as this does not provide answers. It does demonstrate how certain authorities arrived at their own answers. Credit is given the publisher for the original idea.

Consideration is given to:

Acute cholecystitis
—early or delayed operation?
Chronic pancreatitis
—sphincterotomy?
—pancreaticojejunostomy?
—choledochojejunostomy?
Choice of operation for duodenal ulcer
—subtotal gastrectomy?
—vagotomy with gastro-enterostomy or pyloroplasty?
Perforated duodenal ulcer
—simple closure?
—subtotal gastrectomy?
—non-operative treatment?
Hemorrhage from esophageal varices
—balloon tamponade?
—trans-esophageal ligation?
—gastric resection?
—portal decompression?
—splenectomy?
Hemorrhage from gastro-duodenal ulcer
—direct suture control?
—subtotal gastrectomy?
Appendicitis with generalized peritonitis
—non-operative management?
—early operation?
Regional ileitis
—ileocolostomy with exclusion?
—resection?
Peptic esophagitis
(see further comments on this section)
Colon obstruction
—cecostomy?
—transverse colostomy?
Carcinoma of rectosigmoid
—abdomino-perineal resection?
—anterior resection?
—left colectomy?
Carcinoma of the breast
—radical mastectomy?
Metastatic carcinoma of breast
—oophorectomy?
—adrenalectomy?
—hormonal treatment?
—role of radiation?
Papillary carcinoma of thyroid
—local excision?
—radical excision?
Carcinoma of the cervix
—irradiation?
—radical operation?
Intussusception
—surgery?
—reduction by barium enema?
Cancer of the lip and mouth
—neck dissection?
Parotid tumor
—total or subtotal excision of the gland?
Burns
—treatment by exposure?
—treatment by pressure dressings?
Malignant melanoma
—how radical should surgery be?
Penetrating wounds of the heart
—open operation?
—pericardial aspiration?
Thromboendarteritis of the lower aorta
—resection and graft?
—by-pass?
—thrombo-endarterectomy?

The section on peptic esophagitis is illustrative. The problem is introduced by Friesen. There is general agreement as to what is known of etiology. Operative repair of otherwise uncomplicated hiatus hernia is acceptable. But for the more advanced case with severe pain, esophagitis leading to ulceration, stricture and shortening of the esophagus, methods differ.

Merendino resects the lower diseased esophagus and interposes a 15 cm. jejunal segment, does a bilateral vagotomy, and a Finney pyloroplasty.

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*Spastic conditions of abdominal viscera can be promptly relaxed with Trasentine®-Phenobarbital. It acts both on smooth muscle and parasympathetic nerves; it has a direct anesthetic effect on gastrointestinal mucosa; it calms the patient as a whole. You can prescribe Trasentine-Phenobarbital to alleviate pain and spasm in ulcers, colitis, cholecystitis, pylorospasm, ureteral colic or dysmenorrhea. Tablets (yellow, coated), each containing 50 mg. Trasentine® hydrochloride (adiphenine hydrochloride CIBA) and 20 mg. phenobarbital. **C I B A** Summit, N.J.

The many thousands of patients successfully treated with Signemycin* over the past year have confirmed the value of this safe and effective antibiotic agent. One further therapeutic resource is thereby provided the practicing physician who is faced daily in office and home practice with immediate diagnosis of common infections and the immediate institution of the most broadly effective therapy at his command, in his continuing task of the ever-extending control over human pathogens.

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Now buffered to produce higher, faster blood levels; specify the V form on your prescriptions.

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"Eighty-seven patients with various infections of the skin were treated over a period of six weeks with [Signemycin]. Excellent or good results were achieved in sixty-seven, including eleven of twenty-two patients refractory to other antibiotics."

Lewis, H. H.; Frumess, G. M., and Henschel, E. J.: Rocky Mountain M. J. *54*:806 (Aug.) 1957.

"Results of treatment with oleandomycin-tetracycline of 50 infections [mostly respiratory] due to resistant organisms and 40 infections [respiratory, skin, urinary infections] due to sensitive organisms are very encouraging. In some of these patients, [Signemycin] was lifesaving, and in others surgery was made unnecessary. This confirms other reports."

Shubin, H.: Antibiotic Med. & Clin. Therapy *4*:174 (March) 1957.

Based on case reports documented by independent investigators in 26 countries abroad, the clinical response obtained with Signemycin in 1404 patients with a wide variety of infections was successful in 1329 patients; in 13 cases only was it necessary to discontinue therapy because of side effects.

Report on 1404 Cases Treated with Signemycin: Medical Department, Pfizer International. Available on request.

In 50 nonselected patients, Signemycin "...appears to be effective in the treatment of most general surgical infections, including virulent staphylococcus aureus infections. In some cases these infections had been clinically resistant to other antibiotics. The drug is apparently well tolerated."

Levi, W. M., and Kredel, F. E.: J. South Carolina M. A. *53*:178 (May) 1957.

Of 50 patients with various infectious processes, 26 had not responded to previous antibiotic therapy. With Signemycin "Ninety-six per cent of the mixed infections were clinically controlled. . . . and in none of the cases was there any reason to discontinue the drug."

Winton, S. S., and Chesrow, E.: Antibiotics Annual 1956-1957, New York, Medical Encyclopedia, Inc., 1957, p. 55.

Signemycin in 79 patients with severe soft tissue infections: "The average response of these cases was excellent and inflammatory symptoms subsided with almost uniform rapidity.... The magnitude and incidence of surgical intervention was reduced....Side reactions were minimal. . . ."

LaCaille, R. A., and Prigot, A.: Antibiotics Annual 1956-1957, New York, Medical Encyclopedia, Inc., 1957, p. 67.

Five groups of patients (total 211) with acne were treated with one of five antibiotic agents, including Signemycin (55 cases). "The results were evaluated taking into consideration the usual response to such conservative conventional therapy and the rapidity of response." In 8 weeks, Signemycin rapidly attained and maintained the highest percentage of efficacy of antibiotic agents tried.

Frank, L., and Stritzler, C.: Antibiotic Med. & Clin. Therapy *4*:419 (July) 1957.

In the treatment of 78 patients with tropical infections, some complicated by multiple bacterial contamination or present for years, Signemycin was found to be "...an exceptionally effective agent," requiring smaller doses and less extended periods of therapy than with the tetracyclines alone, and "caused no notable toxic reactions."

Loughlin, E. H., and Mullin, W. G.: Antibiotics Annual 1956-1957, New York, Medical Encyclopedia, Inc., 1957, p. 63.

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Ellis excises the diseased esophagus along with a segment of gastric cardia plus resection of the antrum and does esophago-gastrostomy and gastroduodenostomy plus vagotomy.

Watkins treats the unstrictured esophagus by "esophagofundopexy" which restores the angle of entrance by suturing "the top of the greater curvature to the side of the lower esophagus." For the stenotic lesions he resects the lower esophagus, does a proximal subtotal gastrectomy and interposes a segment of colon.

Lischer and Burford take note of the interposition procedures but believe they are for the most part unnecessary. Sixteen cases are reported as treated by Finney pyloroplasty alone—all with marked benefit. They add that this procedure is simple, safe, and (if inadequate) permits of later interposition if desirable.

The book is not one of surgical technic, per se, and there are few illustrations. Rather it is a panel-type review of surgical problems with sufficient reference to technic to make clear the principles of treatment advocated by the proponent. The editors are to be congratulated on having presented such a work in a manner that is most attractive and rewarding to the practicing surgeon. It is a book, once opened, that is difficult to lay aside.—*T.P.B.*

From Sterility to Fertility. By Elliot E. Philipp. Published by Philosophical Library, New York. 118 pages. Price $4.75.

Elliot E. Philipp, an English physician, has written this book for couples showing difficulty producing a pregnancy.

The book begins with a definition of infertility and a discussion of its incidence and a listing of those couples that should seek help in their problem. The next portion deals rather completely with the various disorders of the male and female pertaining to infertility. Following this is a description of some of the more complicated diagnostic and therapeutic procedures used, including the various aspects and types of artificial insemination. The last chapter is concerned entirely with the many problems of adoption.

The book is written in a style that is informative and yet simple enough that no couple should have difficulty understanding it. I feel it has accomplished its purpose of showing husbands and wives what a complete infertility study consists of and the reasons for the many questions and tests. It also helps them to better judge the competency of the physician conducting the study.

There is no section on normal physiology of reproduction which I feel should be included in a text of this type. Also, many of the legal aspects mentioned concerning adoption and artificial insemination in England may be different from those in the United States.

I feel that the book achieves its purpose quite well but not as well as a book of a similar nature by Hamblen.—*R.G.H.*

Hormonal Regulation of Energy Metabolism. Compiled and edited by Laurance W. Kinsell. Published by Charles C Thomas, 1957. 242 pages. Price $5.25.

This book is a record of the Proceedings of the Conference on Hormonal Regulation of Engery Metabolism, edited by Dr. Kinsell and containing contributions by 28 authorities in this field. The subjects treated are carbohydrate metabolism, hormonal regulation of enzymatic activity, the anterior pituitary, pituitary growth hormone thyroid, insulin, and the adrenal cortex.

Each subject is introduced by a presentation outlining the contributor's work in the field, followed by ample discussion by the other members present so that the controversial nature of the subject matter is amply covered.

The difficult problem of any relationship between hormones and enzyme systems is well discussed. The book contains a goodly number of illustrations and tables for a publication of this type. It is to be recommended for the internist as a good review of current thinking on this subject and also for the research worker in the fields of endocrinology or enzymology.—*R.E.B.*

It Pays to Be Healthy. By Robert Collier Page. Published by Prentice-Hall, Inc., New York City. 285 pages. Price $4.95.

This personal health guide suffers from some confusion in presentation, since it is directed both at administrators as individuals with problems of their own and at the same time as a guide for their administrative conduct and technics. It seems obviously more applicable and useful for industrial employers than for self-employed individuals. There is a need for greater efforts to "accentuate the positive."

The author may be over confident about the abilities of individuals to perform self analysis of their life stresses and reactions. Perhaps there is too great reliance on the abilities of an individual with a

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SELECTION OF SUITABLE SULFONAMIDE IS OF PRIME IMPORTANCE IN LONG-TERM THERAPY OF URINARY TRACT INFECTIONS

Drug Must Meet High Standards of Efficacy and Safety

In recent years sulfonamide therapy for urinary tract infections has gained new popularity because the original drugs have been replaced by more soluble, less toxic and more effective sulfas.[1] Gram for gram, a single sulfonamide featuring high solubility and low acetylation is unsurpassed for efficacy and safety — especially in prolonged therapy.

An editorial in the Journal of the American Medical Association states that sulfonamides are successful in 90 per cent of urinary tract infections, and "... should be tried first."[2] There are many properties a sulfonamide should possess before it can be claimed to be efficacious and safe. "Thiosulfil,"® brand of sulfamethizole, is considered to be one of the "... most acceptable sulfonamides for treatment of urinary tract infections ..."[3]

Broad Bacteriostatic Index

"Thiosulfil" is effective against most gram negative and gram positive organisms commonly found in the urinary channels.

High Plasma — Urine Levels

"Thiosulfil" is rapidly absorbed and excreted, achieving high antibacterial levels in the urine and throughout infected tissue, with negligible penetration into red blood cells.

High Solubility

"Thiosulfil," in both the active and acetylated forms, is highly soluble in urine over a wide pH range, thus permitting effective action with minimal side effects. Alkalinization is not required; fluids may be restricted rather than forced.

Low Acetylation

"Thiosulfil" is virtually unacetylated. As much as 90-95 per cent remains in the free therapeutically active form. Virtually all of a given dose is therefore available for antibacterial action.

In a long-term clinical study, patients with incurable chronic urinary infections were kept symptom free for as long as five or six years on a maintenance dose of one or two tablets of "Thiosulfil" daily.[4] In another evaluation, 20 patients were given 25-100 grams of "Thiosulfil" over a period of 20-90 days without incidence of side reactions.[5] Goodhope[6] reports that during 30 months of clinical use with "Thiosulfil," no evidence occurred of exanthemata, urticaria, emesis, fever, hematuria and crystalluria.

Recommended Dosages: 0.5 Gm. four times daily. The pediatric dosage is 30 to 45 mg. daily per pound of body weight. If voiding occurs during the night, an extra half-dose should be given. Fluids may be restricted rather than forced.

Availability: Tablets, 0.25 Gm. (bottles of 100 and 1,000). Suspension, 0.25 Gm. per 5 cc. (bottles of 4 and 16 fl. oz.).

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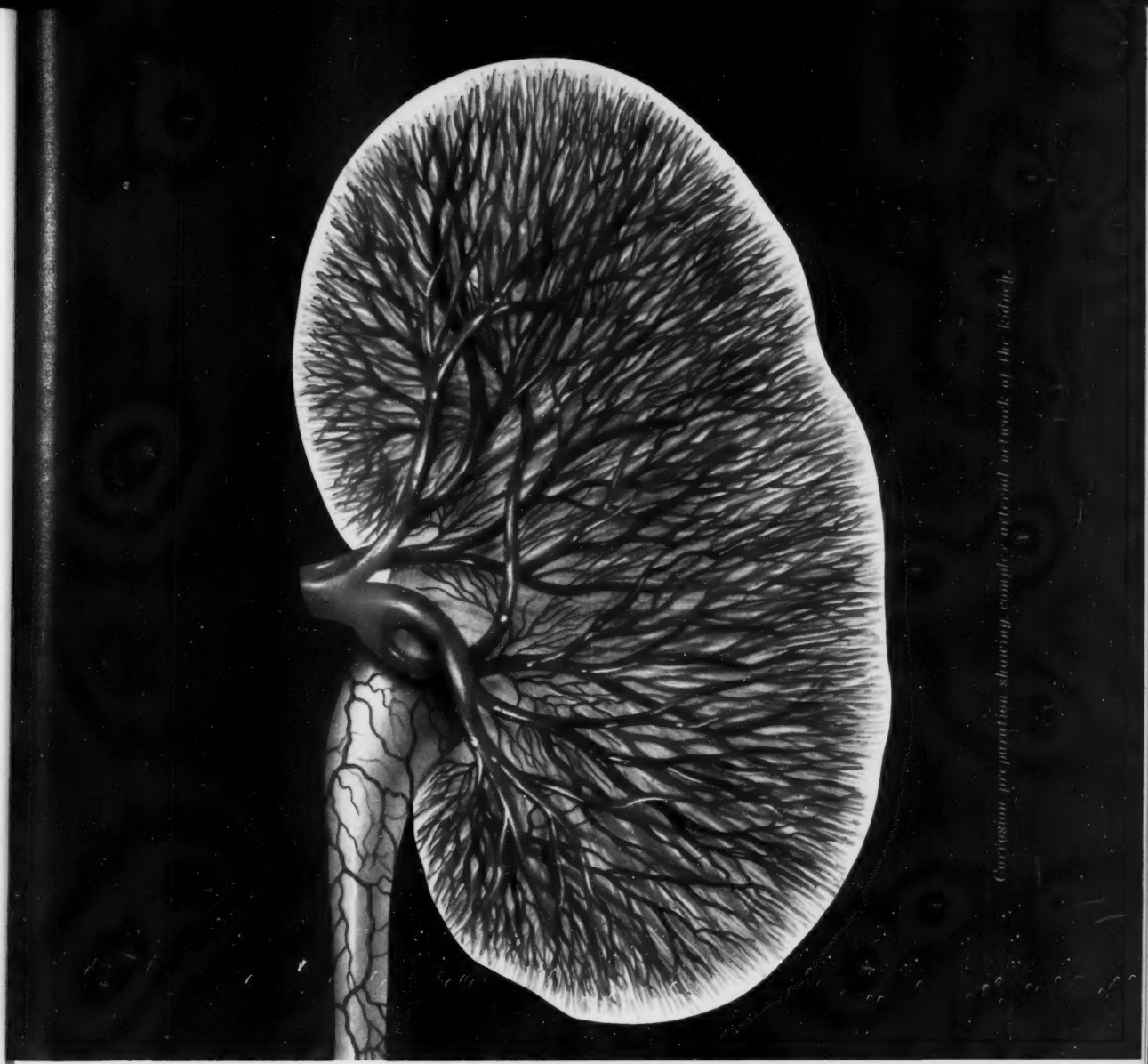

Corrosion preparation showing complex arterial network of the kidney.

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Single sulfonamide features efficacy and safety in long-term therapy of urinary tract infections. The exceptionally high solubility of "Thiosulfil," complete absorption, minimal acetylation, and negligible penetration into red blood cells insure rapid and effective bacteriostatic activity at the site of infection with virtually no side effects.

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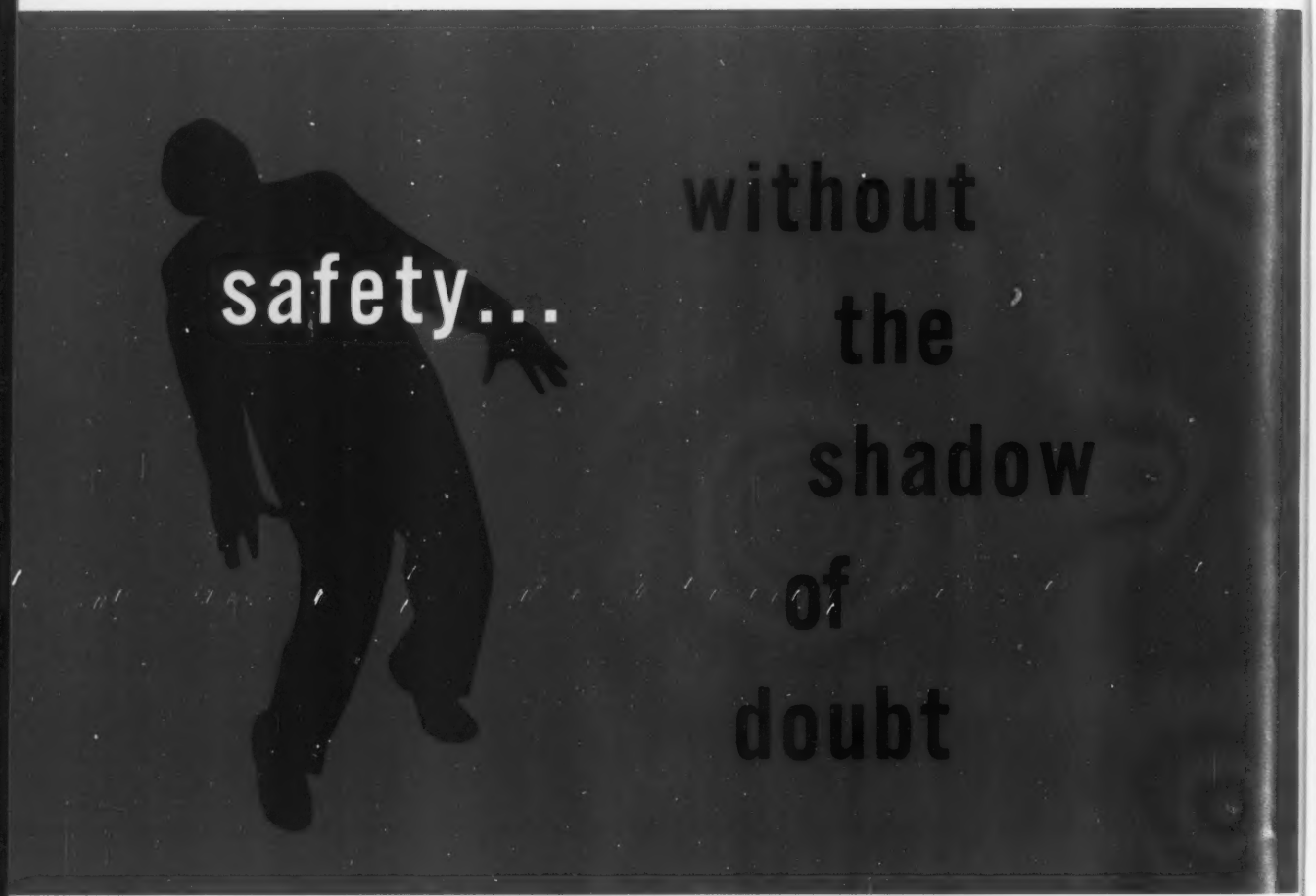

Three years of successful clinical use in the United States without any reported irreversible toxic effect confirms the safety and effectiveness of "Mysoline" in controlling grand mal and psychomotor attacks. "Mysoline" in epilepsy has world wide acceptance.

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for certain disorders of menstruation and pregnancy

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oral progestogen
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unsurpassed efficacy

Now, with small oral doses of this new and distinctive progestogen, you can produce the clinical effects of injected progesterone. In amenorrheic women for example, "As little as 50 mg. of [NORLUTIN] administered in divided doses over a five-day period was sufficient to induce withdrawal bleeding."[1]

***CASE SUMMARY*[2]**

Amenorrhea of 4 years' duration in a 24-year-old married woman. A course of 10 mg. NORLUTIN twice daily for 5 days was followed after 3 days by menses lasting about 5 days. Since no spontaneous menstruation occurred during the following 35 days, she was given another course of treatment with NORLUTIN, 10 mg. twice daily for 5 days. This was followed by menses.

When this patient was given ethisterone, 40 mg. twice daily for 5 days, no bleeding had ensued when she was seen 41 days later.

INDICATIONS FOR NORLUTIN: conditions involving deficiency of progestogen such as primary and secondary amenorrhea, menstrual irregularity, functional uterine bleeding, endocrine infertility, habitual abortion, threatened abortion, premenstrual tension, and dysmenorrhea.

PACKAGING: 5-mg. scored tablets (C. T. No. 882), bottles of 30.

REFERENCES: (1) Greenblatt, R. B.: *J. Clin. Endocrinol.* 16:869, 1956. (2) Hertz, R.; Waite, J. H., & Thomas, L. B.: *Proc. Soc. Exper. Biol. & Med.* 91:418, 1956.

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functional illness to be logical, rather than emotional, about such analysis.

In spite of these doubts, this book will, doubtless, be quite helpful to executives by increasing their understanding of psychosomatic ills. It is hoped that they will not become too confident of their abilities to do it themselves, rather than consulting with a practicing physician or psychiatrist.—*T.R.H.*

Science Looks at Smoking. By Eric Northrup. Published by G. P. Putnam's Sons, New York City. 190 pages. Price $3.00.

This book, written by a lay science and technical writer, presents the pros and cons of the various common concepts of the effects of smoking upon health. The introduction, written by a prominent pathologist, lends a scientific and authoritative approach. The book is written for the most part in simple lay terms and attempts to present the various so-called scientific data upon which the present claims linking cigarette smoking with lung cancer and heart disease are based.

There is a brief review of what knowledge we now have of cancer and its behavior; of experimental methods used to try to link cancer and coronary artery disease with exposure to tobacco; and experimental work using other agents and factors than tobacco to demonstrate cause and effect relationship with cancer and coronary artery disease. The statistical data quoted in the incrimination of tobacco are shown to be full of loopholes and without proof of anything. All evidence to support the theories that tobacco causes these and other diseases is shown to be circumstantial, unscientific, and without experimental or clinical proof. The personal feelings of individuals condemning cigarettes and other forms of tobacco are emphasized as important factors which bias their acceptance of unscientific data to "prove" their points.

Historically it is shown that attempts to legislate against the use of tobacco have occurred since the days of King James I in 1604. Former tobacco phobias have blamed the culprit as the cause of epilepsy, insanity, blindness, syphilis, dwarfism, tuberculosis, and other conditions.

Mr. Northrup attempts to point out that smoking became an integral part of the behavior of Europeans from the time Columbus introduced tobacco to the Spanish court and that personal pleasures derived from smoking, the boon of the industry in the economy, and other factors outweigh the present day case against tobacco.—*R M.B.*

A.M.A. Civil Defense Meeting

The 8th annual County Medical Societies Civil Defense Conference was held November 9-10 at Chicago's Morrison Hotel. Sponsored by the A.M.A. Council on National Defense, the conference is designed to help local medical and health personnel plan their roles in disaster and civil defense emergencies.

Congresswoman Martha W. Griffiths of Michigan reported on the status of national civil defense legislation which received considerable attention during the first session of the 85th Congress. Mrs. Griffiths is a member of the House Committee on Government Operations and its Subcommittee on Military Operations.

Another highlight of the conference was a study of experience gained through several test operational exercises conducted under simulated disaster conditions, including a critique of the national exercise "Operation Alert."

Additional reports were given on such subjects as general preparedness planning, hospital operational preparedness, the role of the county medical society, radiological aspects of radiation fallout, the A.M.A.-F.C.D.A. study project, the A.M.A. program on Asian influenza. The group also broke up into small sections to discuss specific problems.

A.M.A. Committees to Meet

Two committees of the A.M.A. Council on Medical Service plan regional meetings Monday, December 2, in Philadelphia just prior to the A.M.A.'s 11th clinical session.

The Committee on Maternal and Child Care will have its first regional meeting on perinatal mortality and morbidity. Invitations are being sent to members of maternal and child care committees in Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Vermont, Virginia, West Virginia.

The Committee on Aging announces its third regional conference for members of state committees on aging. Subjects to be discussed include physical examinations and a health maintenance program, guides for the organization and operation of medical society committees on aging, medical education in caring for the aged, preretirement counseling, and special research programs of a medical school.

Physicians interested in attending either of these sessions should contact the council for further details.

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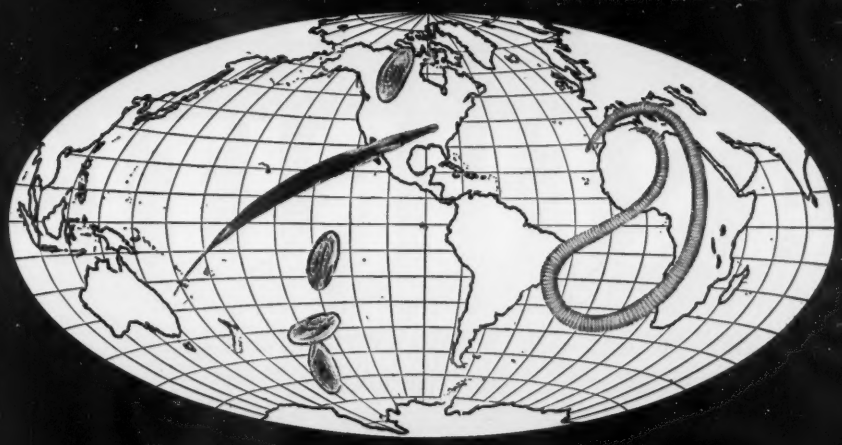

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New Chemotherapy

ARALEN® *in* RHEUMATOID ARTHRITIS

Extensive studies of rheumatoid arthritis and related collagen diseases—in this country and abroad—have shown the antimalarial Aralen phosphate to be highly effective and well tolerated in a large percentage of patients.

Clinical Results with Aralen in Rheumatoid Arthritis

Author	No. of Cases	Major Improvement	Minor Improvement	No Effect
Haydu[1]	28	22	5	1
Rinehart[2]	25	12	4	9
Freedman[3]	50	43	3	4
Bagnall[4]	108	77	12	19
Bruckner[5]	36	32	0	4
Cohen and Calkins[6]	22	17	3	2
Scherbel et al.[7]	25	9	8	8
Total	294	212 (72%)	35 (12%)	47 (16%)

- Success dependent upon persistent treatment
- Often of benefit where other agents have failed
- Remissions on therapy well maintained
- Remission of 3 to 12 months possible even if treatment is interrupted
- Tachyphylaxis not evident

GENERAL EFFECTS:

- Patient feels better
- Patient looks better
- Exercise tolerance increases
- Walking speed and hand grip improves

LABORATORY EFFECTS:

- E. S. R. may fall slowly
- Hemoglobin level may gradually rise

ANALGESICS AND STEROIDS:

- Requirements usually reduced or eliminated

JOINT EFFECTS:

- Pain and tenderness relieved
- Mobility increases
- Swellings diminish or disappear
- Muscle strength improves
- Rheumatic nodules may disappear
- Even severe or advanced deformity may improve
- *Active* inflammatory process usually subsides
- Joint effusion may diminish

DOSAGE:

Aralen is cumulative in action and requires four to twelve weeks of administration before therapeutic effects become apparent.

Latest information indicates that an initial daily dose of 250 mg. of Aralen phosphate is preferable to the higher doses sometimes recommended. However, if side effects appear, withdraw Aralen for several days until they subside. Reinstate treatment with 125 mg. daily and, if well tolerated, increase to 250 mg. The usual maintenance dose is 250 mg. daily.

New Chemotherapy

INDICATIONS:

- Rheumatoid arthritis, acute or chronic —with or without adjunctive therapy.
- Spondylitis
- Arthritis associated with lupus erythematosus or psoriasis

THEORY OF ACTION:

Aralen appears to suppress or induce remission of rheumatoid inflammatory processes by inhibiting adenosinetriphosphatase.

HOW SUPPLIED:

Aralen phosphate: 250 mg. tablets in bottles of 100 and 1000.
125 mg. tablets in bottles of 100.

Tolerance:

Aralen is usually well tolerated. Toxic effects are usually mild and to date have been transitory in nature, disappearing completely either on continuance or cessation of therapy or on reduction in dosage.

Gastrointestinal disturbances (e.g. nausea, rarely vomiting, diarrhea, abdominal cramps, anorexia) are frequent manifestations of intolerance. Temporary blurring of vision (due to interference with accommodation) is also relatively frequent.

Pleomorphic skin eruptions (e.g. lichenoid, maculopapular, purpuric), although generally mild, may preclude the use of an optimum dosage schedule. If a skin reaction persists on a reduced dosage schedule, or recurs after reinstitution of treatment with gradually increasing doses, discontinue Aralen till the lesion again disappears and consider resuming treatment with Plaquenil® (brand of hydroxychloroquine).

Less frequently transitory vertigo, headache, lassitude, or neurological disturbances, such as nervousness, irritability, emotional change, and nightmares have been reported. Instances of unexplained slight gradual weight loss as the patient's general health and arthritic condition improved have been mentioned. Occasional instances of bleaching (depigmentation) of the hair have been described.

Although an occasional instance of leukopenia, with normal differential count, has been reported (WBC about 3000), it has not proved troublesome because it has always been reversible on discontinuance, or diminution of the dose. Even spontaneous reversal may occur while full dosage is maintained.

Caution:

Aralen is known to concentrate in the liver and, although hepatic damage has never been reported, the drug should be used with caution in the presence of liver disease. In the presence of severe gastrointestinal, neurological, or blood disorders, the drug should be used with caution or not at all. If such disorders occur during the course of therapy, the drug should be discontinued. Concomitant use of gold or phenylbutazone with Aralen should be avoided because of the tendency of these agents to produce drug dermatitis.

Clinical Comments:

Of fifty patients receiving Aralen therapy, "43 have become really well; that is, they have no stiffness, and any pain that occurs can reasonably be attributed to use of joints affected by secondary degenerative changes. They have no evidence of joint inflammation, but may have a raised erythrocyte sedimentation rate. They have little or no need for analgesics." *Freedman*[3]

"One hundred and twenty-five private patients have been carefully followed clinically and haematologically while receiving well over 200 patient-years of chloroquine [Aralen] therapy. The results are considered good in 70%, one-half of these cases being in remission. Improved work performance, sedimentation rate, and hemoglobin levels paralleled the major objective gain in this 70%. 90% of them remained on chloroquine [Aralen] therapy, half for more than two years. Classical peripheral rheumatoid arthritis, spondylitis, arthritis of juvenile onset, and rheumatoid disease with psoriasis, all appeared to respond about equally well.

"It is suggested that chloroquine comes closer to the ideal for long-term, safe, control of rheumatoid disease than any other agent now available." *Bagnall*[4]

"Out of the 36 rheumatoid arthritis cases we treated . . . favorable results were obtained in 32 cases. *Bruckner et al.*[5]

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COUNTY SOCIETIES

Dr. Barrett A. Nelson, Manhattan, president of the Kansas Medical Society, was a guest of the Sedgwick County Society at its first fall meeting in Wichita, October 8. The scientific program included three presentations: "Bone Sterilization with Cobalt," Dr. Carl K. Zacharias; "The Influence of Diet on the Healing of Fractures," Dr. Solomon Leyva, and "Infant Asphyxiation," Dr. Archibald Tetzlaff.

Members of the Cloud County Medical Society were hosts to the Golden Belt Medical Society at a meeting held at the Concordia Country Club on October 10. Dr. Samuel Zelman, Topeka, spoke on "Liver Function Tests" and Dr. C. D. Bell, Lincoln, Nebraska, discussed "Dermatology in General Practice." A business session followed the dinner meeting.

Dr. W. Clarke Wescoe, dean of the University of Kansas School of Medicine, was speaker at the October meeting of the Leavenworth County Society. His topic was "The Future of the Community Hospital." Guests at the meeting were wives of members, representatives of the hospital board of directors, and administrators.

Physicians of the First District, at the call of the councilor, Dr. Emerson D. Yoder, Denton, held a dinner meeting at the Atchison Community Hospital on October 22. Members of the Auxiliary were present for dinner, after which the groups separated. Dr. Barrett A. Nelson, Manhattan, and Dr. Yoder addressed the physicians, discussing the new healing arts act, indigent care in Kansas, and other topics of current medical interest.

The regular meeting of the Wyandotte County Society was held in Kansas City on October 15. Dr. Francis T. Collins, Topeka, president of Kansas Blue Shield, was guest speaker, having as his topic "Blue Shield versus Commercial Carriers."

A system of priorities for distribution of Asian flu vaccine was adopted by the Cowley County Society at a recent meeting in Arkansas City. Speaker at the meeting was Dr. William H. Fritzemeier, Wichita.

Dr. George I. Curran, of the University of Kansas Medical Center, spoke on "Inhibitions of Cholesterol Synthesis in Man—A New Approach to the Problem of Atherosclerosis" at the October 7 meeting of the Shawnee County Society in Topeka.

Medical Education Week in April

The third annual Medical Education Week, nationwide tribute to the progress of American medical schools, will be promoted during the fourth week in April by medical schools and the medical profession.

April 20-26 will be devoted to an all-out effort to create a greater understanding among the public of both the achievements and the problems of medical schools. Each of the sponsoring organizations—the American Medical Association, the Student American Medical Association, the Woman's Auxiliary to the A.M.A., the Association of American Medical Colleges, the American Medical Education Foundation, and the National Fund for Medical Education—is asking its membership to reserve this week for community and statewide salutes to area medical schools.

Local and state programs will be reinforced by national publicity through network television and radio, newspaper syndicates, and magazines. In addition, sponsors will send promotional aids to their state and county officers to help in local observances.

During the 1957 Medical Education Week, medical societies in 32 states and woman's auxiliaries in 42 states planned various activities, and their past successes are expected to lead to an even more widespread acknowledgment of the achievements of medical schools in 1958.

Help for Medical Assistants' Groups

A new how-to-do-it organizational manual for medical assistants was introduced at the second national convention of the American Association of Medical Assistants in San Francisco, October 4-6. Edited by leaders in assistants' groups around the country, the manual is being published by the A.M.A.'s Public Relations Department. The manual, titled "Take-off Techniques," discusses such organizational processes as securing medical society cooperation, planning educational programs, and keeping members informed.

This is the second publication for medical assistants the A.M.A. has prepared this fall. A new packet, outlining medical assistants' organizational aims and activities, was completed recently and is available on request to medical societies and assistants' groups.

It is estimated that for every dollar spent by vocational rehabilitation agencies, $10 is returned in taxes to the government during the working life of the person helped. A study on the subject was recently made by the Massachusetts Division of Vocational Rehabilitation.

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Phenacetin (3 gr.)	194.0 mg.
Acetylsalicylic Acid (2½ gr.)	162.0 mg.
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Hyoscyamine Sulfate	0.031 mg.
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Prophenpyridamine Maleate	12.5 mg.
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Combines Meprobamate (*400 mg.*) the most widely prescribed tranquilizer . . . helps control the "emotional overlay" of duodenal ulcer — without fear of barbiturate loginess, hangover or habituation . . . *with* PATHILON (*25 mg.*) the anticholinergic noted for its extremely low toxicity and high effectiveness in the treatment of many G.I. disorders.

Dosage: 1 tablet t.i.d. at mealtime. 2 tablets at bedtime. *Supplied:* Bottles of 100, 1,000.

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Heart Disease Statistics

More Americans than ever before are now living long enough to die from heart disease.

This point is made in a statistical report on heart disease published recently by Health Information Foundation in its monthly bulletin, *Progress in Health Services*.

Disorders of the heart, blood vessels and related organs, the Foundation pointed out, caused over 850,000 deaths last year—more than half the total number of deaths in this country. In 1925 these diseases caused only about one-third of all deaths, and in 1900, only one-fifth.

In a sense, said Foundation President George Bugbee, the increasing prominence of heart disorders "is a reflection of medical progress. With many once-feared infectious diseases now under control, more Americans are living to an age where they are more likely to become subject to heart disease and other degenerative disorders."

An estimated five million Americans have heart disease, and another five million suffer from related disorders such as high blood pressure (hypertension), hardening of the arteries (arteriosclerosis), cerebral hemorrhage, rheumatic fever, and chronic nephritis (kidney disease).

"Substantial progress," the Foundation said, "has been made against premature death from many forms of heart disease, notably conditions of infectious origin—rheumatic and syphilitic heart disease, subacute bacterial endocarditis, etc. Surgery, drugs and special diets have been effective in certain cases of hypertension. But coronary heart disease remains a major unsolved problem."

Deaths from heart diseases alone have increased 60 per cent since 1900 and now account for 360 fatalities per 100,000 population, or nearly two-fifths of all deaths. More than ever, heart disease has become an affliction of old age, the Foundation said. About 70 per cent of all deaths from this cause occur after the age of 65.

Although disability from heart disease is apparently more prevalent among women, it causes more deaths among men. In fact, 75 per cent more men than women died from heart disease in 1955, as opposed to 15 per cent more in 1900. The disparity is highest between the ages of 35 and 49.

One frequently-stated explanation for this puzzling trend is that "men are thought to be particularly subject to and perhaps particularly vulnerable to strains and pressures of modern life, factors presumed to be important in causing the disease."

Commenting on current efforts to discover a preventive or cure for heart disease, Mr. Bugbee stated: "Coronary heart disease apparently flourishes where living conditions are highest, diets richest and psychological pressures heaviest—in other words, in the type of environment that seems to typify modern America. . . .

"The complexity of heart disease, the many disorders to which it is related, the long-term investigations needed before it can be better understood—all show that the road ahead may be a long one. . . . The public should realize that even more funds are needed for added research in this field."

The public has another role as well, he added. The American Heart Association, he said, advises that "some forms of heart disease can be prevented and a few can be cured. Almost all cases can be helped by proper treatment, especially if started at an early stage."

Mr. Bugbee concluded: "Thus, while the public support of group activities for research and for better medical and hospital care is vital, each person has an individual responsibility to use present medical knowledge in his own behalf—not only when illness strikes, but in time of apparent good health as well."

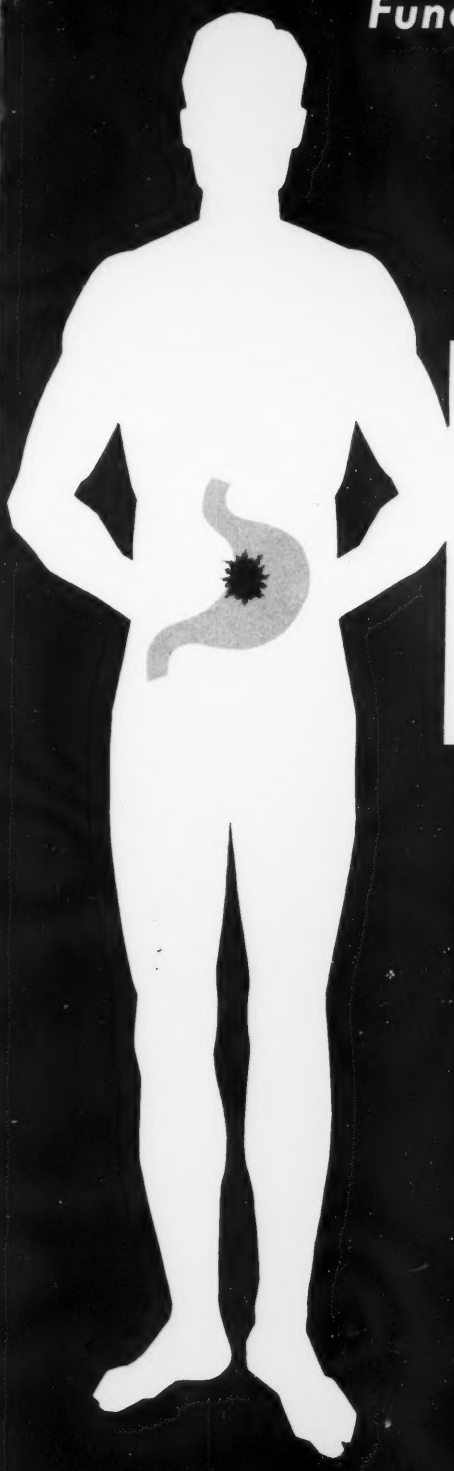
Cancer Film Bookings

Hope in the thought that 75,000 lives in America need not be lost needlessly to cancer each year is the theme of a dramatic educational film recently added to the A.M.A. Film Library. Titled "The Other City," the film stresses the encouraging fact that doctors currently are saving one in three patients as compared with a previous one-in-four ratio. Setting of the film is Racine, Wisconsin. Four basic thoughts are developed: (1) Racine empty and lifeless; (2) a symbolic representation of what cancer is; (3) how the 75,000 inhabitants of this token city could have helped save themselves, and (4) Racine alive and bustling.

Produced by the American Cancer Society, the 16-mm. color film runs 22 minutes and 30 seconds. It is suitable for showings on local television as well as for church, club, and school gatherings. Medical societies may book the film through the A.M.A. Film Library.

"Any traffic offense so serious it calls for a fine over $100 rates a jail sentence," says Judge R. A. Pfaff of Los Angeles. "Nobody ought to be allowed to buy that kind of driving."

During the past two years, Americans have bought Savings Bonds at a pace that is exceeded only by the World War II years.



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PIONEER ALUMINUM HYDROXIDE GEL

FAST ACTING REACTIVE GEL

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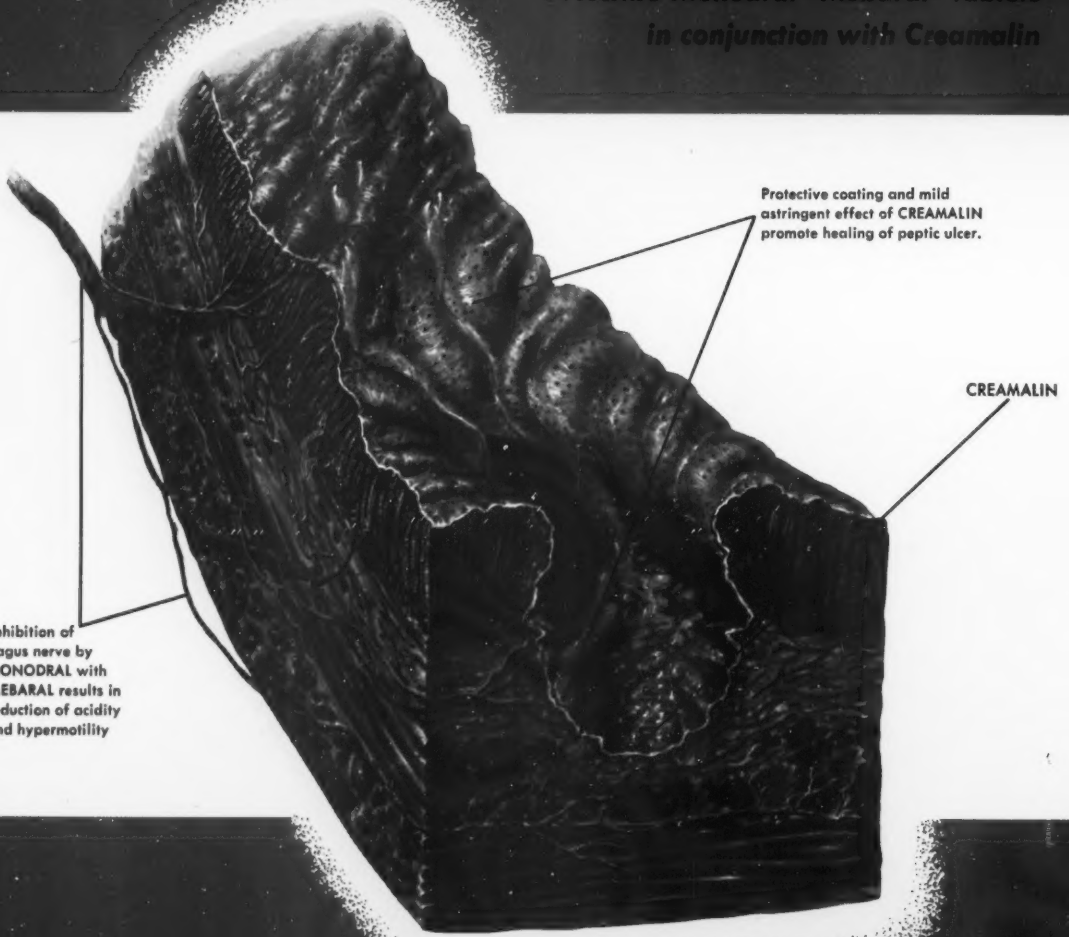
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CIRCUIT COURSES 1957-58

ORTHOPEDICS, RHEUMATOLOGY AND REHABILITATION

EASTERN CIRCUIT—Dec. 3-6
Speakers—Peltier, Leonard F., M.D., Ph.D.
Rankin, Thomas J., M.D., F.A.C.P.

WESTERN CIRCUIT—Mar. 4-7
Rose, Donald L., M.D., F.A.C.P.
Tice, Galen M., M.D., F.A.C.R.

DIAGNOSTIC PROGRESS

EASTERN CIRCUIT—Feb. 4-7
Speakers—Lemoine, A. N., Jr., M.D.
Poser, Charles M., M.D.

WESTERN CIRCUIT—Apr. 22-25
Sauer, Gordon C., M.D.
Wilson, Sloan J., M.D., F.A.C.P.

CARDIOVASCULAR DISEASE

EASTERN CIRCUIT—Apr. 1-4
Speakers—Allbritten, Frank F., Jr., M.D., F.A.C.S.
Crockett, James E., M.D.

WESTERN CIRCUIT—Feb. 4-7
Diehl, Antoni M., M.D.
Miller, Don R., M.D.

EXTREMES OF LIFE

EASTERN CIRCUIT—Jan. 7-10
Speakers—Curran, George L., M.D.
Gianakon, Harry G., M.D.

WESTERN CIRCUIT—Dec. 3-6
Hashinger, Edw. H., M.D., F.A.C.P.
Miller, Herbert C., M.D.

METABOLIC DISEASES

EASTERN CIRCUIT—Mar. 4-7
Speakers—Bolinger, Robert E., M.D.
Calkins, Leroy A., M.D., F.A.C.S.

WESTERN CIRCUIT—Apr. 1-4
Leger, Lee H., M.D., F.A.C.P.
Schloerb, Paul R., M.D., F.A.C.S.

CURRENT THERAPY

EASTERN CIRCUIT—Apr. 22-25
Speakers—Christianson, John A., M.D.
Friesen, Stanley R., M.D., F.A.C.S.

WESTERN CIRCUIT—Jan. 7-10
Proud, G. O., M.D.
Rising, Jesse D., M.D.

when anxiety and tension "erupts" in the G. I. tract...

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Dosage: 1 tablet t.i.d. at mealtime. 2 tablets at bedtime. *Supplied:* Bottles of 100, 1,000.

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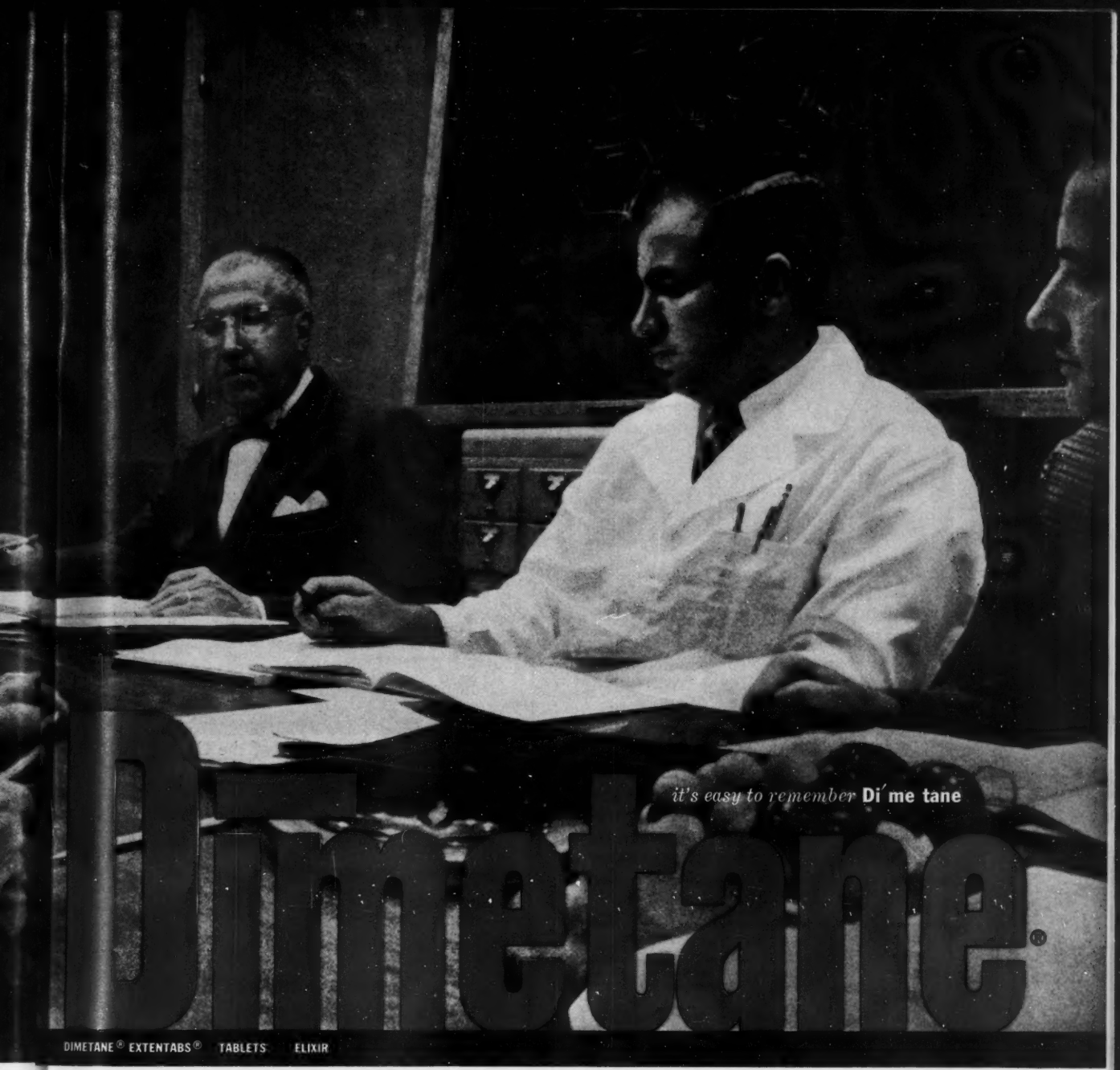
why Dimetane is the best reason yet for you to re-examine the antihistamine you're now using

» *Milligram for milligram, DIMETANE potency is unexcelled.* DIMETANE has a therapeutic index unrivaled by any other antihistamine–a relative safety unexceeded by any other antihistamine. DIMETANE, even in very low dosage, has been effective when other antihistamines have failed. Drowsiness, other side effects have been at the very minimum.

» unexcelled antihistaminic action

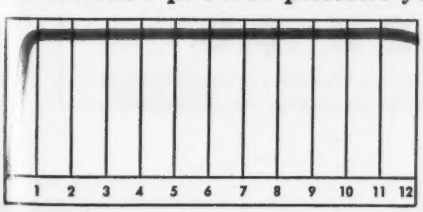
Diagnosis	No. of Patients	Response				Side Effects
		Excellent	Good	Fair	Negative	
Allergic rhinitis and vasomotor rhinitis	30	14	9	5	2	Slight Drowsiness (3)
Urticaria and angioneurotic edema	3	1	1	1		Dizzy (1)
Allergic dermatitis	2		1	1		Slight Drowsiness (2)
Bronchial asthma	1		1			
Pruritus	1		1			
Total	37	15	13	7	2	Drowsiness (5) Dizzy (1) 16.2%

From the preliminary **Dimetane Extentabs** *studies of three investigators. Further clinical investigations will be reported as completed.*



DIMETANE IS PARABROMDYLAMINE MALEATE – EXTENTABS 12 MG., TABLETS 4 MG., ELIXIR 2 MG. PER 5 CC.

a blanket of allergic protection, covering 10-12 hours—with just one Dīmetane Extentab » *DIMETANE Extentabs protect patient for 10-12 hours on one tablet.*



Periods of stress can be easily handled with supplementary DIMETANE Tablets or Elixir to obtain maximum coverage.

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Dosage:

Adults—One or two 4-mg. tabs. or two to four teaspoonfuls Elixir, three or four times daily. One Extentab q.8-12 h. or twice daily.

Children over 6—One tab. or two teaspoonfuls Elixir t.i.d. or q.i.d., or one Extentab q.12h.

Children 3-6—½ tab. or one teaspoonful Elixir t.i.d.

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Medical Education Congress

Problems confronting medical education in the rapidly changing scene will be the main topic of concern at the 54th annual Congress on Medical Education and Licensure, February 9-11. Sponsored by the A.M.A. Council on Medical Education and Hospitals, the Federation of State Medical Boards of the United States, and the Advisory Board for Medical Specialties, the congress will be held at the Palmer House, Chicago.

The conferees will view medical education's broad potential in the light of four factors—the changing characteristics of the nation's population, sociological trends, economy, and medical knowledge—and the implications of these factors on medical education, medical research, and medical care.

In addition, four workshop committees, composed of representatives from the A.M.A., the Council, the A.A.M.C., higher education, government, business, insurance, labor, and agriculture, will discuss various problem areas, endeavor to clarify questions that need to be raised, and recommend possible ways for medicine to assume leadership in solving these problems. The committees' reports will be presented before the entire congress for discussion from the floor.

On Monday morning, February 10, the council will conduct its annual co-sponsored meeting with the Advisory Board. This session will be devoted principally to discussions of problems in graduate medical education created by the changing status of the patient and the role of the community hospital in graduate medical education. The federation will hold its second examination institute on Saturday, February 8, and its regular meeting on Tuesday, February 11.

The habit of saving is a joint effort of husband and wife in 59 per cent of American families, a recent survey concludes.

In a Palo Alto traffic court, offenders are confronted with a large sign reading: "Things we know without being told:

"1. You were not going that fast.
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Historical Material Needed

In preparation for the observance of The Kansas Medical Society's centennial anniversary, members of the Committee on History are attempting to collect all material of historical interest. Physicians who can contribute information, records, etc., are urged to send such to

Committee on History
Kansas Medical Society
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Caffeine	30 mg.
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Each teaspoonful (5 cc.) contains:

ACHROMYCIN® Tetracycline equivalent to tetracycline HCl	125 mg.
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Salicylamide	150 mg.
Ascorbic Acid (C)	25 mg.
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Methylparaben	4 mg.
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Adult dosage for ACHROCIDIN Tablets and new, caffeine-free ACHROCIDIN Syrup is two tablets or teaspoonfuls of syrup three or four times daily. Dosage for children according to weight and age.

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For anxiety, tension and muscle spasm in everyday practice.

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RELAXES BOTH MIND AND MUSCLE

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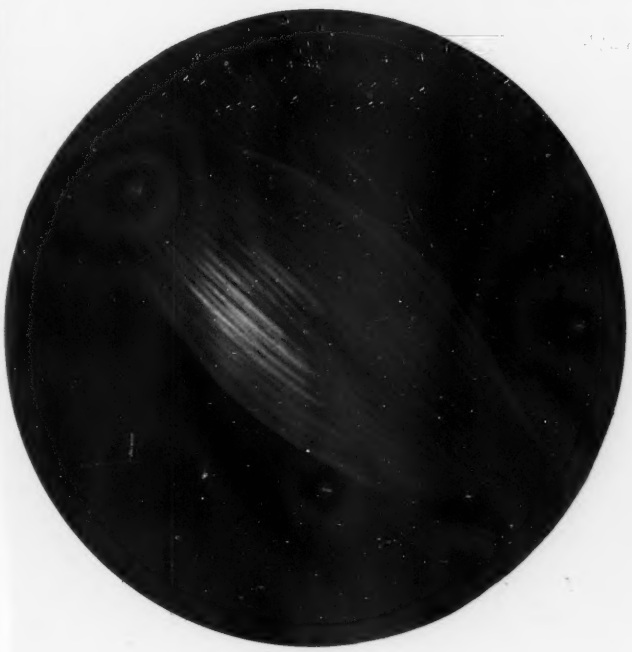

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Supplied: 400 mg. scored tablets
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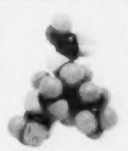
Usual dosage: One or two 400 mg. tablets t.i.d.

Literature and samples available on request



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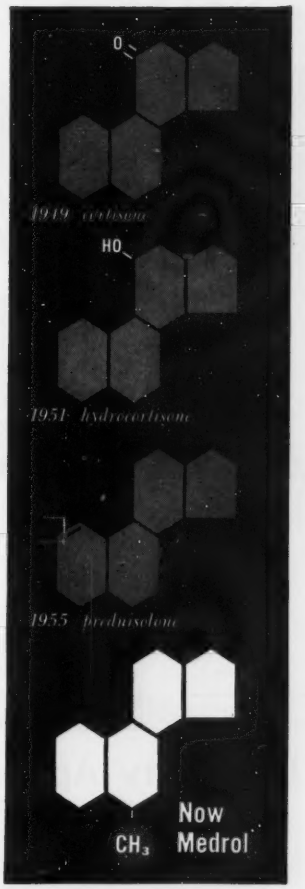

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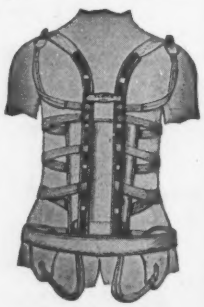

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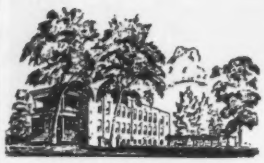

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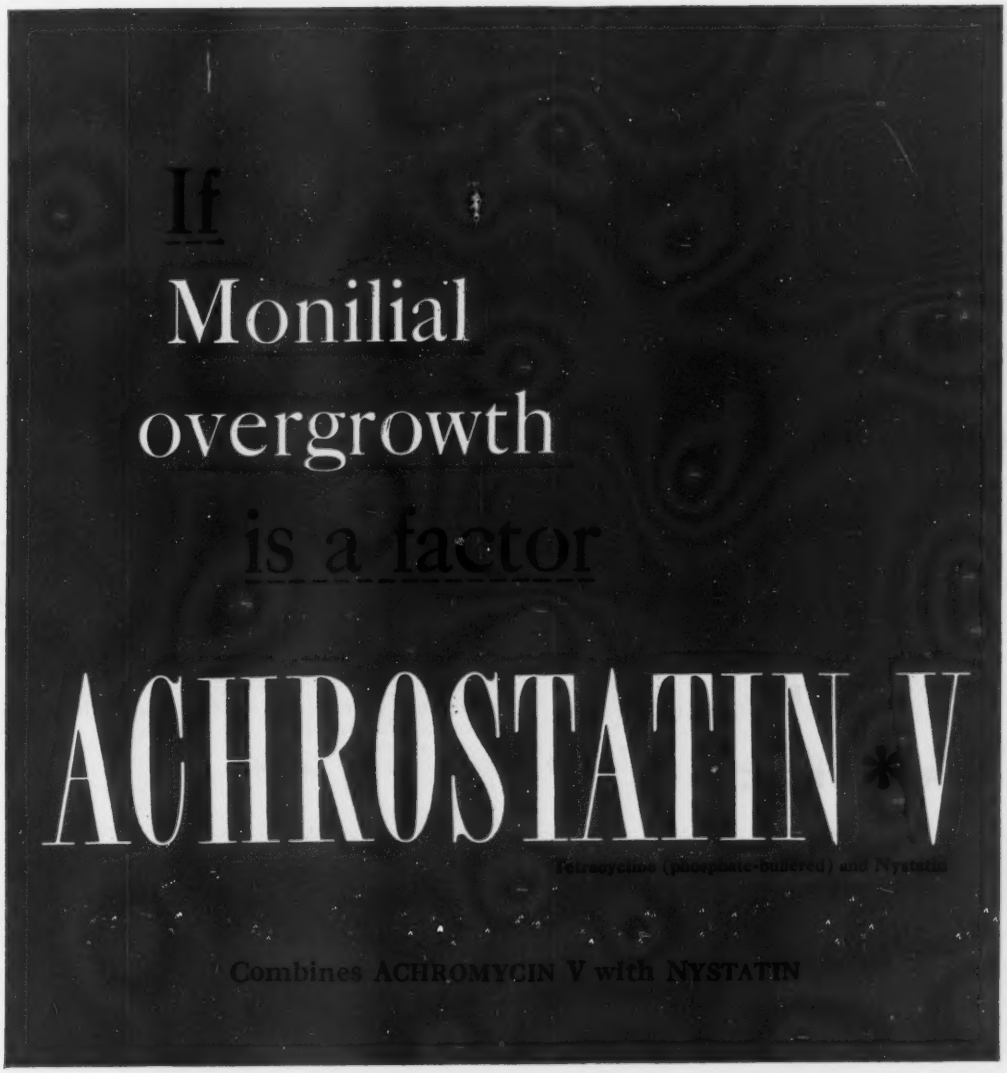

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(1) Asung, C. L.; Charcowa, A. I., and Villa, A. P.: Sea View Hosp. Bull. *16*:80, 1956. (2) Asung, C. L.; Charcowa, A. I. and Villa, A. P.: New York J. Med. *57*:1911 (June 1) 1957. (3) Report on Field Screening of Nostyn by 99 Physicians in 1,000 Patients, June, 1956.

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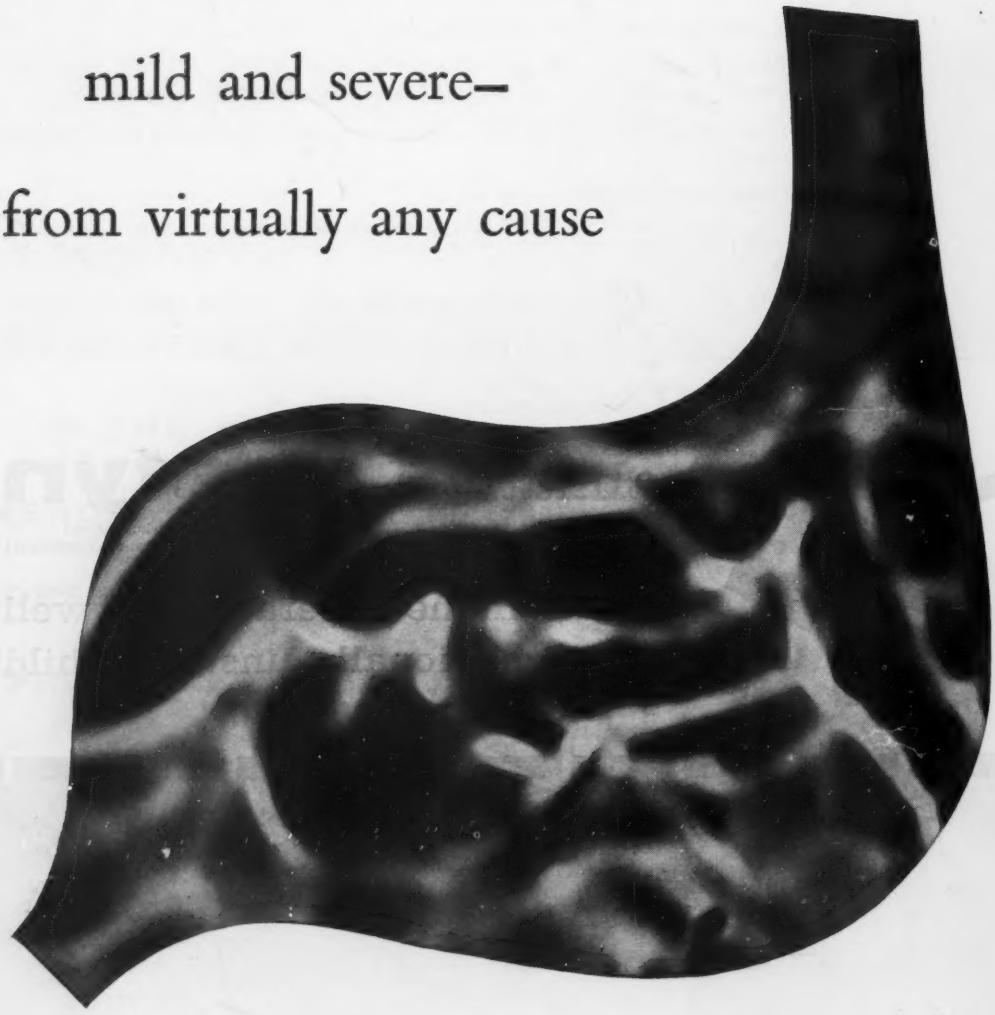

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